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SHAKESPEARE'S "TEMPEST."

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The great and striking peculiarity of this play is that its action lies wholly in the ideal world. It differs, therefore, from every other work of Shakespeare in the character of its mediation. Our poet, in most of his dramas, portrays the real world, and exhibits man as acting from clear conscious motives, and not from supernatural influences. But here he completely reverses his procedure; from beginning to end the chief instrumentalities of the poem are external; its conflicts and solutions are brought about by powers seemingly beyond human might and intelligence. It should, however, be classified with "As You Like it" and "Midsummer Night's Dream," in both of which the ideal world is the grand mediating principle. But in these two plays the real world is also present, and there is in the course of the action a transition from one to the other. Hence, too, there follows a change of place and time, and the so-called unities must be violated. But the "Tempest" has not this double element: with the first scene we are in the magic realm of the island and its influences, which do not cease till the last line of the play. Hence it is more unique, more homogeneous, than the two dramas before mentioned; the unities of time and place can be observed, and the action lies wholly in the ideal world.

It is now the duty of the interpreter to translate these poetic forms and mediations into Thought. Thus he gives the same meaning, the same content, which is found in the play; but he addresses the Reason and Understanding instead of the Imagination. What Shakespeare expresses in poetry he must express in prose, and moreover must supply the logical nexus which the imaginative form cannot give. Hence, above all things, let him not fall into the error of merely substituting one poetical shape for another, whereby nothing is explained and only confusion is increased. If Prospero is called Shakespeare, or by any other name, what is gained by the change? The same difficulties remain for Thought as before. The task is not easy, nor is it likely to give satisfaction at first to the reader; for these beautiful ideal shapes must perish before our eyes and be transformed into the dry, abstract forms of prose. The contrast is striking, perhaps repulsive; but, if we wish to comprehend and not merely to enjoy Shakespeare, there is no alternative.

Let us bring before our minds the leading elements of the play. First, Alonsò and his company represent the real world; but they have arrived at a magic isle where they are under the sway of unknown external agencies Within certain limits they still can act through themselves, but their chief movements are determined from without by the ideal world, Ariel and his spirits, who constitute the second element. Thus the fact is indicated that the ideal, supernatural world is master of the real, natural world. Thirdly, there is Prospero, a being who commands both, yet partakes of both these principles, the real and the ideal, the natural and the supernatural: he is connected by nationality and even by family with those in the ship, but is at the same time lord of Ariel and of the spirit-world, who fulfil his behests with implicit obedience.

Here appears the two-fold nature of Prospero, which is the pivotal point of the drama, and hence its comprehension must be our first object. He controls the elements, he is gifted with foresight, he possesses absolute power; yet he has been expelled from his throne and country. To be sure, there is the difference of time between his expulsion and his present greatness, but this cannot adequately account for the change. Let us try to explain these two elements of his

character, as they have been elaborated fully by the poet in the course of the drama. In the first place, Prospero must manifest the finite side of his nature. As an individual, he comes in contact with other individuals and things; in general, with the realm of finitude in which he himself is finite. Limitation begets struggle; thus arise the collisions of life. Many men, it seems, have been his superiors in these struggles; his brother is a much more practical man—has dethroned him and driven him off. Such is Prospero the individual, and as such he collides with various forms of finite existence. He has been hitherto defeated in these conflicts. This is the one element. But Prospero also possesses the side of universality; he is spirit, intelligence, which comprehends, solves, and portrays all the collisions of the finite world. It is only through long discipline and devoted study that he has attained this power. His pursuit of knowledge, moreover, cost him his dukedom, and hence was the source of his chief conflict—that with his brother. He thus stands for spirit in its highest potence, the Universal, but he is at the same time individual, and hence is exposed to the realm of finite relation and struggle, which, however, his reason must bring into a harmonious unity.

But his spiritual activity is mostly confined to a special form of intelligence, that form which embodies its content in pictures and symbols, namely, the creative Imagination. Prospero does not employ pure thought, but poetic shapes and images. He must therefore be the Poet, who has within him the world in ideal forms, and hence possesses over it an absolute power. He calls up from the vasty deep whatever shapes he wishes in order to execute his purposes and perform his mediations. Thus he solves all the contradictions in which he as an individual is involved, and subdues all the influences which come within his magic circle. For he is this universal power, and in the sphere of ideality, in the realm of spirit, nothing can resist him. The revenge of Prospero is therefore ideal, for certainly our poet would never have taken such instrumentalities to portray a real revenge. Moreover, the play must end in reconciliation, the harmony of the Individual with the Universal; for spirit possesses

just this power over the conflicts of finite existence: it must show itself to be master.

In this way we can account for the commanding position of Prospero in the drama. He is the grand central figure, the absolute power who controls ultimately the movements of every person and from whom all the action proceeds. The form of mediation is therefore external; but, truly considered, Prospero is no *deus ex machina*, no merely external divinity brought in to cut the knot that cannot be untied. The interpretation must always exhibit him inside of the action; the clew is his double nature. As an individual, he is engaged in conflict; but then he steps back, beholds and portrays that conflict, and solves it through spirit in the form of Imagination. He is therefore the mediator of his own collisions; thus externality falls away. The solution is hence not external, which would be the case if the absolute power simply stood outside of the action, and commanded everything to take place. It is the special duty of the critic to explain these external mediations, of which the play is full, into a clear, spiritual signification.

Prospero is, therefore, the mighty spirit standing behind and portraying the collisions of his own individual life and of finite existence generally. But this is not enough to account for his activity. He could easily put his experiences and struggles in a drama without invoking the aid of the supernatural world. The necessity of this element must be seen. If he would give a complete picture of his own activity, he must not only portray the above-mentioned conflicts, but also portray himself as portraying them. In other words, he must depict himself as Poet, as Universal; he must give an account of his own process, and that account must also be in a poetic form. This will push the Imagination to the very verge of its powers, for thus it must do what abstract thought alone can usually do: namely, it must comprehend and portray itself. Hence comes the external form representing it as the absolute master over its materials.

The Drama thus attempts to account for itself in a drama, in its own form. Having swept over the whole field of life, and portrayed every species of collision, it now comes to

grasp itself, its own process. Thus it becomes truly universal, a complete totality; for it takes in the world and itself too. This play is often considered Shakespeare's last, and it may be regarded as a final summing up of his activity, or, indeed, that of any great poet. In his other works he has portrayed the manifold variety of collisions, but now he portrays them being portrayed. Here he reaches, if he does not transgress, the limit of dramatic representation; he can only use strange symbolical shapes to indicate his meaning.

It is now time to see the poem springing from the two-fold nature of Prospero. As individual, we must expect to behold him involved in some of the ordinary dramatic collisions. An analysis will reveal three of them all in regular gradation of importance. First, there arises the collision in the Family — Prospero the father, on the one hand, against the lovers Ferdinand and Miranda, on the other. The old conflict is depicted: the choice of the daughter is opposed by the will of the parent. Secondly, there is portrayed the collision in the State: Prospero, the rightful ruler of Milan, against the usurper Antonio, supported by the king of Naples, both of whom with followers are on board the newly-arrived ship. Thirdly, there is the more general collision which may be stated to be between rationality and sensuality, the former represented by Prospero and Ariel, the latter by Caliban with Trinculo and Stephano. The Sensual rises up against the Rational in all its forms, in institutions and even in Art, as well as in Intelligence. Such is the material for Imagination to work upon. But the other side must not be forgotten. The Imagination, at the same time, portrays itself elaborating this content. The Poet is not only going to make the drama, but is going to show himself making it. This gives the ideal element, representing Prospero as having the absolute power of mediating all the collisions of his individual existence.

Such are the threads which must be carefully kept before the mind in order to comprehend the organization of the play. Next, the entire movement of the action must be considered. It is three-fold. In the first place, there is the expulsion of Prospero by the rulers in the ship, who have now come into his power; this is the wrong done to Prospero, and consti-

tutes the pre-supposition of the drama. Next follows the punishment of this wrong in the island, the realm of Prospero, through his spirit-powers. Lastly, the reconciliation of the two sides by the repentance of the guilty and forgiveness of the injured, when we have the final harmony resulting from the conflict. It, therefore, is connected with that class of Shakespeare's plays in which wrong is atoned for by repentance, and the criminal escapes by "heart's sorrow" the punishment of death, the legitimate consequence of his deed.

Let us now take the poem in hand and see whether these things, with a reasonable interpretation, can be found in it, or whether they are the absurd subtleties of the critic's fancy. First comes the tempest, from which the drama takes its name, the effect of which is to divide the ship's company into three parts, corresponding to the three threads above mentioned, and to scatter them into different portions of the island. But the peculiarity of this tempest is, as we learn in the next scene, that Prospero has brought it about through Ariel; it is, therefore, not a tempest which has taken place through natural causes, but through spiritual causes: it is, evidently, a poetical tempest. For certainly Shakespeare would not have us believe that storms are produced by spirits ordinarily; but this one certainly is. What, then, does the author mean? for his conduct here assuredly needs explanation. I think he tells us, in saying that Ariel, by command of Prospero, caused the tempest and dispersed the company, that tempests are called up by the Poet—that they are a poetical instrument employed to bring about a separation of parties, and to scatter them into different places as here. We are, therefore, led to inquire whether Shakespeare himself has ever employed this means in any of his dramas. Accordingly, we find the same instrumentality in "Twelfth Night" and "Comedy of Errors" used for the same purpose. It is an artifice of the Poet for scattering, or possibly uniting, his characters in an external manner. Here then, in the very first scene, the Poet is portraying his own process.

The second scene of the First Act, which now follows, is the most important one in the play, for it gives the key to the action. A careful analysis of all its elements will therefore be necessary. First appears before us the Family, the pri-

mary relation of man—here that of father and daughter, the latter of whom speaks in the first line of her parent's art, which she herself, being purely individual, does not possess, but still knows of. The relation is a natural one, not spiritual, between parent and child. She is excited by sympathy for the sufferers, when the father assures her that no one has perished — in fact, no one can perish — in the vessel. Again we ask the question, why this confidence of Prospero that all will be saved? The prevision in his art, which he speaks of, is that of the Poet, who ordains beforehand, by the strictest necessity, the course of the action and the fate of the characters, and knows what kind of a drama he is going to write. He lays down his magic mantle—that is, he assumes the individual relation to his daughter—and then begins to give an account of his life and conflicts as an individual. Here, then, he relates his first collision: a brother, with the aid of a foreign king, has driven him from his dukedom. Nor does Prospero conceal the cause of his banishment. He neglected the Practical for the Theoretical; he handed over the administration of his government to others, and devoted his time to his books, his study, his art. The logic of this transition is evident. He cuts loose from the real world, and the real word retorts by cutting loose from him—drives him off. Where, now, is he? Having severed all his individual relations, he is manifestly left just in his ideal realm. But there is one tie which he cannot break; he is a father: this bond still unites him to finite existence; or, if he must depart for the ideal world, the daughter must go along. The two, therefore, are put in a vessel together, and reach the magic island. Prospero intimates that it was this relation which saved him, otherwise he would have given that final stroke which dissolves all individual relations:

> *Mir.* Alack, what trouble was I then to you!
> *Pro.* O, a cherubim
> Thou wast, that didst preserve me. Thou didst smile
> Infused with a fortitude from heaven.

The nature of the transition of Prospero from the real to the ideal world is thus made manifest. It differs, therefore, from "As You Like it," where there is a similar transition, based, however, upon the flight from the World of Wrong.

It also differs from "Midsummer Night's Dream," where there is likewise a similar transition, based, however, upon the flight from the world of Institutions or of Right. But in the "Tempest" this transition is based upon the flight from the whole finite world of conflict, of individual relation, of practical activity; and hence necessarily lands Prospero in the magic island, in an ideal world.

It is furthermore to be noticed that both parties have their just and their unjust element. Prospero is wronged; he is dispossessed of his recognized rights by violence. Yet he himself is not without guilt; the real world has a claim upon him as ruler, which claim he has totally ignored. Hence the play must result in reconciliation and not in the death of the wrong-doers. Prospero as Poet must see both sides and represent them in their truth, and cannot avenge himself as an individual. This drama, therefore, will not have a tragic termination; it must, as previously stated, end in the repentance of the one party and forgiveness of the other.

Prospero thus brings the story of his life down to the tempest, embracing the conflicts of his individual existence. His enemies, wrecked in the ship, are now scattered over the island and in his power. Here begins the action proper of the drama. But behold! Miranda sleeps in the presence of the spirit-world; she is mortal, individual merely—she possesses not the vision and faculty divine. It is no wonder that she cannot choose but sleep in the invisible world, for eyes cannot help her. But who appears here in this spirit-realm? An airy being called Ariel, who seems not to be restrained by any bonds of Space and Time, who flies abroad and performs on land and sea the behests of his master. He was the cause of the shipwreck we now learn, and he gives a vivid account of his feats in that work. Again an explanation is demanded, and we feel compelled to say that Ariel is that element of Prospero before designated as Imagination, which thus gives an account to itself of its own deeds in a poetic form. For Ariel controls the elements, is sovereign over the powers of Nature, and directs them for the accomplishment of his master's purposes. In general, he seems to perform every essential mediation in the entire poem. What possesses this power but Imagination? Yet we must not

press this meaning too closely, for Shakespeare does not allegorize, but always individualizes; he fills out his characters, whether they be natural or supernatural, to their sensuous completeness. We shall observe that there are many sides given which are necessary to the image, but not necessary to the thought even when the thought preponderates. Therefore these Shakespearian creations cannot be interpreted as allegories, in which each particular stroke has its separate signification, but rather the purport of the whole should be seized and its general movement.

But this dainty spirit Ariel is not wholly satisfied with his lot; he has that absolute aspiration of intelligence—nay, of Nature herself—namely, the aspiration for freedom. What is meant here by freedom? merely to get rid of labor and then be idle? We think not; it is rather to accomplish the work in hand — to embody itself in some grand result: this is the toil of Spirit, of the Imagination. The freedom is the realization of its end, when the Imagination has clothed itself in an adequate form, which process, it may be added, can only be completed at the close of the poem; then Ariel is dismissed to the elements. But he never could have been free unless he realized aspiration in an objective form. It will thus be seen that Ariel quite corresponds to that element of Prospero's character which was called Spirit, Intelligence, or the Universal as opposed to the Individual.

But the Poet Prospero proceeds further; he gives a history of Ariel. Once he was the slave of the hag Sycorax, who imprisoned him in a cloven pine because he would not perform her earthy and abhorred commands. Here is presented the conflict which is as old as man, spirit against flesh, Reason against Appetite. Moreover, we see its earliest form: spirit is overcome and is subordinate to flesh, to sense. Hence the groans of Ariel from his prison-house, till at length Prospero comes to the island and frees him. Now he is the servant of Prospero, and transforms himself into every kind of shape which Prospero commands, in order to perform the various mediations of the play. He is at once sent off on an errand, the nature of which will soon be seen.

But what is this other shape which now rises upon our view—a monster, half man, half beast? He is the slave of

Prospero, compelled to perform all the menial duties; in other words, his is the service of sense. His origin is not left in doubt; he is the son of Sycorax, and the heir of her character. Now we behold the opposite of Ariel in every way: Caliban is sense in all its forms, sensuality included. The peculiarity of their names, too, has been noticed by critics: with a slight transposition of letters, aërial becomes Ariel and cannibal becomes Caliban. But at present, under the rule of Prospero, sense is subordinated, is made to serve. Caliban is therefore the natural man whom Prospero has tried to educate, yet without altering his nature—who cannot be anything else but a slave. His knowledge is just sufficient to contest with Prospero the supremacy of the island. The rise of mankind from a state of nature, through language and education, is here indicated. The claim of Caliban to the sovereignty of the island by right of birth, against the right of intelligence, is a rather severe satire upon the principle of legitimacy, which may or may not have been intended by Shakespeare. This antithesis between Prospero and Caliban should be observed, for it will constitute hereafter one of the collisions of the play.

There can hardly be a doubt concerning the main signification of these two figures of the drama. They are not portrayed as human in form, but as unnatural, or, if you please, supernatural; they exhibit one side, one element of man in its excess: Ariel is spirit without sense, Caliban is sense without spirit. They are therefore not human, for man includes both of them. Or, to revert to our abstract terms, we behold the two principles of Prospero's character, the Individual and Universal, objectified into independent forms by the Imagination of the Poet. Moreover, the inherent antithesis and hostility — in other words, the collision between these two principles—is also indicated. Prospero has, so to speak, separated himself into the two contradictory elements of his character and given to each an adequate poetic form, and has also stated their contradiction. But he remains still master over both; they, though opposites, are still his servants, are still the instruments of the Poet, who stands behind and directs their acts. Such is their fundamental representation in the play.

Another relation has been indicated in the poem with distinctness, namely, the relation of the race of Caliban to Art. The foul witch Sycorax is the representative of the Ugly; she has even lost the human form, "with age and envy grown into a hoop." She came from Argier, a land beyond the pale of culture, where spirit is still enslaved in the bonds of sense. But even there she could not live on account of her negative character. She is put on the island, which remains a wild, untamed jungle till the arrival of Prospero. The fate of Ariel has been mentioned as well as his enfranchisement; but at present, under the rule of Prospero, nature is the servant of mind, and is the bearer of its forms; Art is therefore possible since the Sensuous is now controlled by the Spiritual. For Art is spirit expressed in a sensuous form.

So much is introductory. The Poet has elaborated all his instrumentalities, has brought the story of his life down to the time of the action, and is now ready to portray the collisions of the play. Our Ariel brings to the fair maiden a lover—the Poet never fails to do so. By his mysterious music, Ferdinand, one of the ship's company, is led to Miranda. Both fall in love at first sight; the natural unity of sex, which calls forth the Family, asserts itself on the spot. What else could happen? Ferdinand is alone in the world, Miranda is almost so—only her father is known to her. If man and woman belong together, certainly these two must feel their inseparableness, for there is nobody else to whom they can belong. It is the old climax: admiration, sympathy, love. "They are both in either's powers"; each one finds his or her existence in the other. But now appears the obstacle, for the course of true love can never run smooth—at least, in a drama. The collision so frequently portrayed by Shakespeare again arises for a new treatment, that between the will of the parent and the choice of the daughter. Prospero opposes the match, charges Ferdinand with being a traitor and spy, and lays upon him the menial task of removing "some thousands of logs." But Miranda is present with consolation and even offers to assist in the labor; the young prince bravely stands the trial—he is willing to undergo any toil for love's sake. The mutual declaration is made; then fol-

lows the mutual promise; the unity of feeling is complete. It is the essence of all love-stories.

The next time we meet with the father in this connection, he has yielded his objections and sealed their pledge with his consent. But all along we have been aware that his opposition was feigned, that he intended from the start to acquiesce in their marriage. In fact, he was the very person that brought it about. For his conduct he has adduced an external motive: "lest too light winning make the prize light." Still deeper is the design which he cherishes of not only restoring his daughter to his own possessions, but also of making her queen of Naples. But the true internal necessity for his opposition being feigned lies in his double nature. The Poet, who is none other than Prospero himself, interposes an obstacle—the refusal of the parent—which parent, also, is none other than Prospero himself. As father he stands in an individual relation to his daughter and comes into conflict with her; but as Poet he has brought about this conflict, and must solve it by giving validity to the right of choice. Such is the solution demanded by reason, and the one which Shakespeare universally gives to such a collision. Prospero knows, therefore, from the beginning that his daughter will triumph—in fact, that he must make her triumph. The key to his conduct is that the father or individual and the Poet or Universal are one and the same man.

The right of choice is therefore victorious over the will of the parent, a right which, though generally conceded at the present time, was once stoutly contested. Their love has been portrayed through its successive stages: the first predilection, the mutual declaration, the secret plight of troth, the consent of the father. But one thing more remains to be done: the ceremony with full and holy rite must be ministered. Upon this point Prospero lays the greatest stress; he speaks of it no less than three times in different places. Without the formal solemnization of marriage their union cannot be ethical; it can only bring forth the most baleful weeds—hate, disdain, and discord. Lust is not love; indeed it is the destruction of genuine love: a Caliban cannot truly enter the marriage relation. Moreover, the ceremony gives

reality to the Family, which hitherto existed only in the subjective emotions of the parties. Religion (or the State in our time) comes in with its sanction and objectifies their union—makes it an institution in the world.

The marriage rite is therefore not a meaningless and unnecessary formality. Yet the origin and primal basis of the Family is love, which the Poet has here portrayed in all its fervor. But by itself simply, and ungoverned, it degenerates into lust. Our author would teach the lesson, if we understand him, that the ethical element and the emotional element must both be present in true affection; for it is destroyed by the Ethical alone, which is the case when the daughter is wholly obedient, and simply follows the will of the parent, and lets him choose for her. She thus cannot have much intensity in her love, and hence Miranda insists upon her affection, and the father at last yields. On the other hand, passion alone without any ethical restraint is even more fatal to love. Now both these elements in their one-sidedness are represented by Shakespeare as antagonistic to the unity of marriage. The truth is, the Emotional must be regulated, restrained, and made permanent, by the Ethical; and the Ethical, which now takes the form of devotion to husband or wife instead of obedience to parent, must be filled, vivified, and intensified, by the Emotional.

Next comes the masque, whose connection with the rest of the play must be carefully studied, for it reveals more than anything else in the work the special character of Prospero as Poet. He calls up Ariel, who, it will be noticed, always appears when some important mediation of the drama is about to be performed. For what purpose is he now invoked? Mark the language of Prospero:

> I must
> Bestow upon the eyes of this young couple
> Some vanity of mine art; it is my promise
> And they expect it from me.

At once there rise up before us the goddesses of the ancient Greek world, the poetical forms of all ages. These, then, are the spirits over which Prospero has power through his minister Ariel; this, too, is his art, which has brought forth all the other wonderful shapes of the poem. They are the beau-

tiful forms of the Imagination, over which the Poet alone has control.

But let us notice the content of this little interlude: what will be its theme? Nothing else but what has already taken place, only in a new form for the lovers, who thus behold a representation of their own unity. The main-spring of the action is Juno, the spouse of the king of Gods and Men; therefore both the type and guardian of wifehood, of chastity, of domestic life. She sends Iris, her many-colored messenger, for Ceres—

> A contract of true love to celebrate,
> And some donation freely to estate
> On the blest lovers.

Such is the object of the visit of the two goddesses, which is still more precisely expressed by each in their songs: Juno particularly confers marriage-blessing and honor—Ceres, physical comfort and prosperity. But mark that Venus and her blind boy are invited to stay away. They represent unholy lust; they plotted the means whereby dusky Dis, or devilish sensuality, carried off the innocent Proserpine, the daughter of Ceres, to the infernal regions. Thus the ethical element is again emphasized.

The relation of Prospero as parent, as individual, has now been portrayed, as well as the collision resulting therefrom and its solution. But he is also Poet, and hence must shadow forth the whole subject in the objective forms of poetry. It has already been pointed out that his feigning an objection to the love-match resulted from his poetical prevision, and hence that such an objection must finally be abandoned. Thus he has manifested in himself, and also depicted in the drama, the collision in the Family. But now, when consent has been given, and the hindrances smoothed over, a second time he appears as Poet, as if to leave no doubt of his nature in the mind of the reader or hearer. He steps back and reproduces in a new poetical dress the substance of the whole story before the lovers. This little play within the play thus has the effect of a double reflection of the action.

New beings appear in order to celebrate the contract of true love; Naiads whose crown is chastity, and the sun-burnt sicklemen whose trait is industry, join in a dance. But,

while Prospero is busy calling up these beautiful shapes from the ideal realm, he suddenly thinks of the conspiracy of Caliban. A new collision against himself as an individual has arisen which demands immediate attention, the real world rushes in upon him, and at once the poetical world vanishes. He is thus reminded that there are other things to be done, other struggles to pass through, and finally other collisions to be portrayed. But he is highly vexed at the interruption, and in his anger he utters the doom of the whole finite world, which sounds like the Last Judgment. It is the most sublime passage of its length to be found in Shakespeare:

> And like the baseless fabric of this vision
> The cloud-capp'd towers, the gorgous palaces,
> The solemn temples, the great globe itself,
> Yea, all which it inherit, shall dissolve,
> And, like this insubstantial pageant faded,
> Leave not a rack behind. We are such stuff
> As dreams are made of, and our little life
> Is rounded with a sleep.

It is just this finite world which is so full of conflict and has caused him so much trouble. No wonder, then, that he almost curses it, and announces its utter perishability. But though the life and works of man, and also the physical globe, are transitory, he is far from saying that mind, the Universal, will thus pass away. On the contrary, he now invokes the latter against destruction, for it is the master over finitude, over the negative powers of the world. Again our Ariel must appear: "Come with a thought." Why? Only because he is thought. He answers, "Thy thoughts I cleave to." Why again? Because he cannot be separated from them. Thus Prospero and Ariel prepare for the conflict with Caliban, the account of which will be taken up in its proper connection.

Such is the first thread; the second is the collision in the State. This is the central movement of the play. Prospero as rightful duke comes into conflict with a usurper, his own brother, who is supported by the king of Naples. Again we see that Prospero, in his individual relation, falls into strife, and is overthrown. The history of his expulsion has already been given, and it must be noticed also that he relates the occurrence as something long antecedent to the play, and not

embraced in its action, though its necessary presupposition. Such has been the wrong done to him. But now the Universal element appears; his enemies are completely in his power; their punishment is to follow.

The tempest has conveniently scattered the ship's company into groups, in one of which are to be found all the offenders. But first there arises a conflict among themselves. There are three good characters—that is, those without guilt —Gonzalo, Adrian, and Francisco; opposed to these are the three wicked ones — Alonso, Antonio, and Sebastian. The two latter show their hatred, especially of the honest Gonzalo, by bitter ridicule, while Alonso is beginning to feel repentance for his deeds through the loss of his son. Yet a deeper retribution appears to be impending over him: he has aided in dethroning a brother; a brother now threatens to dethrone him. The same man whom he assisted seems about to punish him. But his repentance will save him from final overthrow. So much for Alonso; Antonio is a much worse man. His conduct is consistent; he cannot stop in his negative career; he must continue dispossessing and assailing the rights of others, for that is the logical necessity of his character. Having wrongfully expelled his nearest relative, he very naturally begins to plot against his greatest benefactor, the king of Naples. But the poetical mediator Ariel is again on hand to prevent the consummation of the plan; the Poet cannot let the matter end in that way.

The main poetical mediation is next to be accomplished, of course through Ariel. It is reconciliation by repentance. Repentance means that man has the power to make his wicked deed undone, as far as its influence upon his own mind is concerned. He can free himself from remorse, from the consequence of his own negative act. But the repentance must be complete; it includes the confession of the wrong, contrition adequate to its magnitude, and an entire restoration of its advantages. Spirit thus becomes again at peace with itself, and is relieved from its own destructive gnawings. This reconciliation is therefore a spiritual process, and hence must be accomplished by the representative of spirit, Ariel.

The three criminals are in the presence of Prospero, who is invisible to them; they are hence in the presence of their

own wrong; retribution is at hand. Again we urge upon the reader to keep in mind the double nature of Prospero: as individual he has suffered these injuries, but as universal he is the Poet who mediates and portrays them. He therefore puts into operation his spirit-world, whose main object is now to excite conscience, to rouse remorse. They are hungry; a banquet is spread before them by several strange shapes. When the king and the rest begin eating, the banquet vanishes. Thus it is indicated to them that a power beyond their consciousness is at work in the isle. Here he is—Ariel—who now drops his invisible form and appears to them like a harpy, the symbol of vengeance. He calls himself Destiny, or a minister of Fate; his function is retribution. He comes to avenge the wrong done to Prospero,

> . . . . . for which foul deed
> The powers, delaying, not forgetting, have
> Incensed the seas and shores, yea, all creatures,
> Against your peace. Thee of thy son, Alonso,
> They have bereft; and do pronounce by me
> Lingering perdition — worse than any death —

So far it resembles that external power which the Greeks called Fate, and which even controlled Jupiter himself. But is there no salvation from the wicked deed? Hear Ariel again:

> . . . whose [the powers'] wraths to guard you from—
> Which here in this most desolate isle else falls
> Upon your heads — is nothing but heart's sorrow,
> And a clear life ensuing.

What a wonderful change! Ariel is no longer the representative of Grecian Fate, but is a preacher of Christian Gospel, whose doctrine is repentance — "heart's sorrow and a clear life ensuing." Man can now avoid the retribution of ancient Destiny. Though Ariel has assumed this shape to the wicked three, yet the reader has all along known that it was merely a poetical form; that Ariel, in reality, is not a minister of Fate, but of Prospero, of spirit, of self-determination.

Thus the three "men of sin" are brought to a consciousness of their crimes; they wax desperate at their guilt, which now reacts negatively upon their minds—"like poison, 'gins to bite the spirits." The innocent three weep over them, "brimful of sorrow and dismay." When the guilty have

sufficiently atoned for the wrongs which they have committed, Prospero is ready to grant forgiveness; he declares that their repentance is "the sole drift of his purpose." The frenzy begins to subside after they enter his charmed circle; gradually reason returns, and Prospero, though invisible, tells to their innermost conscience the nature of their crimes and the consequent punishment. All is now plain to them subjectively. But, to remove the last doubt, Prospero presents himself to their eyes looking just as when he was Duke of Milan, and confirms his previous utterances. Alonso, in particular, repents in the most heartfelt manner, surrenders the advantages of his wrong, and asks pardon; he makes his deed undone as far as lies in his power. Therefore his son is restored to him: the marriage of Ferdinand and Miranda receives blessing; thus it is ethically complete, having received the sanction of both parents.

It is evident that the ability which the mind possesses of healing its own wounds, of cancelling its own negative deeds, is here portrayed. Spirit alone can reconcile itself with itself and come to inner harmony. For if it is truly universal, it must have the power to mediate all its conflicts. Therefore the play cannot have a tragic termination, as was before stated. It must end in reconciliation, mediation. Prospero himself, in his highest potence, represents this absolute might of spirit, which cannot succumb to any struggle, but must overcome every conflict. Though Shakespeare has to a certain extent employed the heathen form of Fate, he has truly expressed the Christian doctrine of Repentance.

We are now ready to take up the third thread, the collision between Prospero and Caliban. The character and origin of the latter have already been noticed; it was stated that he represented the natural man—man still immersed in his senses and not yet elevated to a rational existence. He therefore must collide with the world of spirit represented by Prospero, for the reason that it necessarily subordinates him and even reduces him to a slave. Such is the function of the senses—they are the pack-horses of intelligence; and the physical man, even if he constitute the whole man, must follow the same law. Caliban is therefore a menial of the lowest type, and is set to performing the most degrading

services for Prospero. His ignorance and utter slavishness to the External are manifest from the fact that he cannot comprehend either the mediations of Spirit or of Nature; he regards them as ghosts and goblins sent to torment him.

But Caliban has not always been in this condition of servitude. Prospero found him on the island, treated him with the greatest kindness, taught him to speak, and admitted him to his own family. The result was an attempt to violate the honor of his daughter. Prospero has now learned the very important distinction that an animal is an animal and must be subordinated, at least not admitted to social equality. There is a difference between a man and a brute notwithstanding our so-called humanitarians. By ignoring this distinction we do not elevate the lower, but inevitably degrade the higher. "I had peopled else this isle with Calibans" is the threat of the beast. Thus passes away the high-pressure humanity of Prospero when it comes in contact with the reality.

Such is the man-monster in the family relation; our author is now going to bring him before us in his political and also in his religious character. Every American can study the picture with profit at the present time. Caliban is in deadly enmity with Prospero. The ship also — or the real world, if you please — has its sensual element as well as the island or the ideal world. The next thing, therefore, is the appearance of the representatives of this element, Trinculo and Stephano. They, too, have been separated from the ship's company by the tempest, and from a natural attraction of character have been brought together with Caliban. Here we see the sensual trio made up from the ship and the island. The two strangers bear the stamp of reality, are men of flesh and blood, belong therefore to prosaic life and speak in prose; while Caliban, since he is a native of the island, is strictly a poetical being and speaks in verse. There is also a distinction between Trinculo and Stephano, the former being not so much jester as coward, craven in spirit, with the fear of the External always before his eyes; the latter being a drunkard, the slave of appetite. Caliban represents both persons, for he is mortally afraid of the imaginary spirits,

and he swallows with the wildest ecstasy the contents of Stephano's wine-bottle.

Caliban's religion now appears also; he deifies the man who has gratified his appetite. Yet he himself remains a slave and performs the same servile duties; he will kiss the foot of the new deity, dig pig-nuts for him, and carry all his wood — a task which is so irksome to do for Prospero. But he thinks he has obtained freedom, which to him means the reign of sensuality. The mob seems to have broken loose from the strong hand of Prospero, lust and violence hope now to rule triumphant, and the ominous shout of drunken bestiality falls upon the ear: "Freedom, hey-day, hey-day, freedom! freedom, hey-day, freedom!" It is curious that Shakespeare has endowed two beings so completely opposite as Ariel and Caliban with the same aspiration for freedom. He has thus indicated the two great definitions of that word which have always divided mankind. The one means unrestrained lust and anarchy, the other means liberty through institutions; the one is the realization of sensuality, the other is the realization of reason.

But the political side is still further developed. Such beings must have some conflict among themselves, which Ariel, our poetical mediator, does not fail to bring about. It only ends, however, in a beating given to the coward Trinculo, who is innocent. But they have a common enemy, the present lord of the island, against whom they now conspire. It is King Stephano against King Prospero, the Sensual trying to dethrone the Rational. Stephano is not without his worshippers to-day. He represents the demagogue in the political world, who rules the rabble by gratifying their passions, himself being the incarnation of those passions. He thus unites the worst elements of society in a crusade against all established order and right. It will be noticed, also, that not the least attraction for their "freedom" is the fair Miranda; both Family and State are to be subjected to unbridled lust. But their very nature is turned against them; their innate tendency to theft leads them aside from their purpose, and they are caught in their own toils. Still they cannot reach Prospero; he is spirit, knows of their schemes, and sends

upon them retribution in the shape of dogs and hounds — turns against them their own passions. He is thus victorious in this final collision — all his enemies are now in his power — he has mastered the conflicts of his individual existence. Nay, farther, he has not merely punished, but even reconciled, all his enemies. Caliban himself submits, manifests hearty repentance, and is cured of his delusive worship. Sense thus yields to reason. Such is the truly positive function of spirit: to bring all into harmony with itself, to make all reflect its own image. It may crush out with its power; but that is a negative result, and really no solution of a conflict. The highest attainment of intelligence may be expressed by just this word—reconciliation. The colliding individuals of the play are now united in spirit, and the harmony is perfect. They all have come to see the nature of their deeds; this is their common insight, and therefore their common concord: furthermore, they hasten to make their deed undone. Hence, when the criminals arrive at this island, their destiny is to rise above their hitherto selfish, individual existence, and become reconciled with the Rational, the Universal.

Thus Prospero has changed all his enemies into an image of himself, and has made them participate, to a certain extent at least, in his own double character. Each person through repentance reflects Prospero, and places himself in unity with him. Nor must his double nature be considered anything strange or unknown. It is found more or less developed in every soul. As a moral, and particularly as a thinking being, man must solve the conflicts of his individual existence. Indeed, the sum of all conflicts, and the greatest of all contradictions, is the one above mentioned which in abstract language was called that between the Individual and Universal. Nay, the mightiest of men — for he was a man — whose spirit, however, raised him to be a divinity — Christ himself — was he not the embodiment of this contradiction? A celebrated sarcasm was once uttered concerning him: "Yes, Christ was able to save the whole world, but couldn't save himself." True, and his chief merit. Christ as individual was necessarily involved in the struggles of the world and perished; but as spirit he created it anew, and made it,

so to speak, a different world, for its history since his time is the history of Christianity. So, too, Prospero as an individual is overwhelmed with the collisions of life, but as spirit he has mastered and portrayed them, and even converted his enemies into his own image.

Prospero's career is now at an end, his work is done when the reconciliation is completed. He calls up once more the world of spirits who have been his faithful instrumentalities, in order to bid them farewell forever. He abjures his rough magic, his art; and soon he will break his staff, bury it in the earth, and drown his book. For the present Ariel is retained, who brings together the entire company, and restores even the ship. "Then to the elements," the play ends, his poetical activity ceases.

The relation of the play to Shakespeare himself has frequently been discussed. Long ago a critic suggested that Prospero was Shakespeare. But the mistake has been that the play was supposed to represent Shakespeare's individual life. It might be taken as a portraiture of his poetic, universal life, or that of any great poet. Other mighty individuals have been suggested in place of Prospero, but in such cases there is merely the substitution of one name for another, whereby however nothing is explained. We can only say, as we began, Prospero is the Poet generically, who, in the first place, embodies the manifold themes of his art in a dramatic form; and, in the second place, portrays himself in the act, portrays himself performing his own process also in a dramatic form. The drama can go no further; it has attained the universality of Thought.

Here also can be found the reason why it is impossible to give a theatrical representation of this play. What form shall we assign to Ariel and Caliban? A child for the one, and a low human shape for the other? Then we feel the impassible chasm which shuts off the poet's creation from the stage. The illustrative art is equally impotent in reaching these conceptions. Why is this? Because Ariel and Caliban are thoughts more than images; they are not only far beyond the realm of sensuous representation, but even begin to transcend the realm of pure imagination; hence we can read them and think them, but cannot image them with

clearness; they lie too far in the sphere of unpicturable thought.

If we now put together the beginning and the end of the drama, we find that Prospero departs from the Real, passes through the Ideal, and returns to the Real. The middle stage is alone portrayed in the play. It would seem, therefore that Prospero, being forced to abandon the practical world on account of his devotion to his books and his art, solves in his theoretical domain all the contradictions of finite existence, and thus returns in triumph to the practical world. Thought therefore, though at first antagonistic, finally restores action. Here we behold the theme of Goethe's "Faust," yet treated in a very different manner. But, though it touches the real world at both ends, its action lies wholly in the ideal world.

We have now arrived at the point where we can see the unifying principle of three of Shakespeare's most important works, namely, "As You Like it," "Midsummer Night's Dream," and "Tempest." That principle is mediation through an ideal world. In "As You Like it," this world is idyllic, exhibits a primitive pastoral existence, hence approaches what is actual; but in the remaining two it is wholly supernatural. The three constitute a new species of drama, which belongs to Shakespeare alone. Though other poets have used similar materials and means, yet their products have been entirely different from these plays not only in degree of excellence but also in kind. The general movement is the same in all three: a breach in the real world, a transition to the ideal world where the breach is healed, and a return to the real world. The fundamental distinction between them—though they are not at all alike in details—lies in the fact that in "As You Like it" there is no self-reflection of any kind, hence it is the simplest in structure; that in "Midsummer Night's Dream" the objective dramatic action reflects itself in the "play within the play"; that in "Tempest" the subjective process of the Poet reflects itself along with the action. Taken together they constitute a dramatic cyclus, and may be called the ideal dramas of Shakespeare.

THE MUSIC OF COLOR.

By C. E. Seth Smith.

"There's not the smallest orb that thou beholdest
But in his motion like an angel sings
* * * * *
Such harmony is in immortal souls."
* * * * *

Merchant of Venice, Act V., Scene 1.

The music of the spheres is an ancient story standing in evidence of an apprehension which has always obtained of the harmony of physical phenomena. That the heavenly bodies as bestowers of light give at the same time the harmonies of sound is the notion thus vaguely signified.

This conception, which has for so long a time haunted the human understanding, is by the evolution of scientific facts no longer vague. That there is an analogy between the impression produced by a musical composition and that produced by a painting is undoubted, and has from time to time occupied the attention of both musicians and painters. It remains only for a collocation of such facts as have been in very recent times obtained by the study of the elementary principles of Music and, by means of the prism and spectroscope, of the properties of Light, to demonstrate not only the dependence of both color and sound upon analogous vibration, but that between the laws regulating the *composition* of the one and the other there exists a definite and systematic relationship.

It is the purpose of this paper, through the means now available to science, to give the theory of this relationship; thereby placing beyond the region of doubt the existence of a precise mathematical harmony between the Arts which appeal most potently to man's æsthetic nature — Music and Painting.

Light and Sound are known as attributes of motion, called by one or the other name as the respective organs translate that motion in different ways to the brain; a certain number of regularly recurring motions combined into a single impression giving the sensation of Sound, another set in more numerous proportion giving that of Light.

It must be remembered that these wave-motions have limits, at either end of which certain other vibrations exist, which are untranslatable by the brain either as color or sound.

This limitation, however, is not constant, and differs in various species of animals, in individuals, and even in the dual organs of the man.

Within the recognized limits in the case of sound, those having vibrations from 16 to 38,000 per second, there are some which individual ears detect, which to others are unheard.

Doctor Wollaston has shown that the power of the ear varies much in different persons, and that to many the shrill notes of the cricket and the bat are inaudible.

One ear is often less sensitive than the other in the same person.

The range varies in animals also, and with it the power of producing as well as hearing sounds.

M. Savart has pointed out that the ear of a calf is so constructed that the lowest sounds only are heard, and that its limit must necessarily be *beneath* ours. The lowing of cattle, doubtless, impresses themselves far differently from the impression made on us. Their quick detection of movement inaudible to human beings assists this conjecture. At the higher limit, too, we may instance many insects who both hear and produce sounds shrill beyond our cognizance.

The same variation is found in the power of sight; waves at each end of the spectrum have been demonstrated—heat rays at the lower or red end, and actinic or chemical rays at the higher or violet end, both of which are quite powerless to affect the retina of the eye. Tyndall has shown by experiment that some of these invisible calorific rays brought to a focus, and energetic enough to raise platinum to a red heat, do not cause the optic nerve, placed at the same spot, to be conscious of either light or warmth.* With this "personal" equation distinctly in view, where can the absolute limits of Sound or Light be placed? How rapidly or slowly must motion vibrate to produce that which is neither Light nor Sound? Logically such limits are impossible; that there is a limit to

* Science for Unscientific People, p. 194.

the eye and ear, to each organ, is true; but the fact that this limit so varies in individuals admits the hypothesis, that to a perfect organ the perception of motion is illimitable.

A tuning-fork in agitation, held loosely in the hand, yet produces sound—inaudible, indeed; but, placed upon a firm, resonant base, from the same play of the limbs of the fork a clear full note swells out. The fibres of the wood or other substance are also imbued with motion, and take up and repeat with greater force the silent note of the tuning-fork.

It is to this power of sympathy or synchronism in various bodies and in the air that the impressions translated to the brain as sound are due; and by this synchronism may we understand the true nature of all sensations.*

The vibration of a column of air in a jar responsive to an approaching tuning-fork, and the dancing of "sensitive flames," are due to this power of synchronism.† These vibrations, communicated through various channels, eventually reach the brain, where they are conceived and called Sound.

Chladni has shown that, though the ears be stopped, two persons may converse by stretching a thread between the teeth, or pressing a stick against the breast or throat. Thus may the true manner in which sonorous motion is conveyed to the brain be understood.

By watching the strings of a piano, it may be noticed that whenever a note is sung in a room, that note which represents the same note is thrown into vibration. A deaf man may be so placed as to hear every note that has been sung.

An instrument which acts under the same influence has been discovered in the ear by the Marchese Corti, and which is shaped like the harmonicon. Wedge-like in structure, it divides the cochlea of the ear, and is so constructed that the individual fibres can execute vibrations without throwing the remainder of the membrane into vibration. This wedge-shaped structure is stretched in the direction of its breadth, so that its fibres form a series continually diminishing. These fibres were examined in 1869 by Professor von Heusen of Kiel, and by Helmholtz proved capable of executing the movements suggested.

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* Tyndall on Sound, p. 321. † Philosophical Magazine, 1867.

We are thus led to conclude that it is the limit of the organs in the ear which alone limits the vibrations of motion being translated by it as sound—since all motion is in a condition to produce Sound; all Motion is Rhythmical, a series of undulations of waves to and fro.

Herbert Spencer* proves the rhythm of motion by illustration of natural effects—by the waving of pennants, the vibration of cordage, the sound from an æolian harp, the waving of water-weeds, the rippling of shallow streams and the serpentine course of rivers, the rapid rhythm of the screw of a steamer, and the lateral and vertical oscillations of a railway carriage.

All known forces, too, serve as examples; for Light, Heat, and Electricity, are all propagated by undulations.

The Northern Aurora and the stratification in vacuum tubes shows that the current is not uniform, but comes in gushes of greater or less intensity. In Sound we have interference and beats; in Light, the twinkle of the stars—both resulting from the same cause.

From the production of little ridges in the sand, when the tide is running down, to the rolling of the planets as they alternately present each pole to the sun, all motion is traceable only in a state of vibration.

Even in sensations which expend themselves in the production of Music, Dancing, or Poetry, this is seen—strong muscular efforts in dancing being alternated with weaker—Bars, Piano-forte, and the primary and secondary beat, marking out the Rhythm of Music.

Poetry, even, may be said to be "a form of speech which results when the emphasis is regularly recurrent—that is, when the muscular effort of pronunciation has definite periods of greater or less intensity, periods which are complicated with others of a like nature answering to the successive verses."

Pain has fits of intensity, and Passion comes in bursts.

Since, then, it must be granted that all motion is in a State of Rhythm, a state capable of producing sound—were the organ of hearing sufficiently extended—the following question

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* First Principles, Part 2, chap. xi.

arises: are the *pleasing combinations* of these motions such as might be inferred from a study of Musical laws? Will experiment bear out the inference and show that *all* harmonies result from obedience to similar conditions?

To define our terms: since musical combinations which form harmony are not the result of fortuity or accident, but are the consequence of obedience to well-defined mathematical laws, a short statement of these conditions is necessary.

Pythagoras, 500 years before Christ, recommended to students of Music the simple monochord, and with it all the fundamental laws may be illustrated.

A string stretched and then divided into three equal parts, and fixed at one point of division, will, when sounded, give two notes; that portion of the string whose length is just half that of the other will give the octave of the longer portion.

The string again divided into two parts bearing to each other the proportion of 2:3, when sounded will give notes which are separated by an interval called *a fifth.*

Thus dividing the string at different points, Pythagoras found the so-called consonant intervals in music to correspond with certain lengths of the string, and made the extremely important discovery that the simpler the ratio of the two parts into which the string was divided, the more pleasing was the harmony of the two sounds.

Two notes one of which is the octave of the other blend the most pleasingly together—their ratio is written down as 1:2; next to them, a note and its fifth, written as 2:3; the next most pleasing, a note and its fourth, whose ratio of vibration is 3:4—and so on, each combination growing gradually from incipient roughness to absolute discord, until, when the ratio of 13 to 14 is reached, interference is marked by beats, and the ear testifies its repugnance to so complex a relation of one note to another. The question to be mooted now comes in: since the harmonies — that is, the pleasing combinations of Music — follow a regular mathematical law, will not the result of Motion in other forms—in that of Light—exhibit in its harmonies any obedience to the same or analogous laws?

Modern Scientific investigation already proves how all known forces act in accordance with similar laws, the phenomena of any one illustrating the others, the difference being

only in degree. Analogies between Nerve-force and Electricity, Electricity and Heat, Heat and Light, Light and Sound,* are everywhere admitted; why not, then, an analogy between the Arts built upon those scientific laws if one exist between the forces themselves?

Since obedience to the laws of Sound produces in Music pleasurable harmony, and obedience to the laws of Light produces in Painting a pleasurable composition, is not an analogy between Music and Painting as truthful as one between Sound and Light?

The means of producing both sound and light are in comparison alike. By striking a tuning-fork, by plucking a string, by hammering, Sound is produced, as Light by striking flint and steel, or by rubbing together two pieces of wood or quartz.

Light is motion, for it may impart motion to solids, and by its inseparable heating powers it can be made to turn wheels and lift weights.

Waves of sunlight are of different lengths mixed together, and producing, when so mixed, a sensation upon the optic nerve called "white light." This nerve, like the musical instrument in the ear, spreads out to form the retina, and has upon its terminal filaments most minute bodies termed the "rods and cones." Each of these, Melloni has suggested, accepts only the vibrations of that impinging Light-wave which synchronizes with its own; sympathetic vibration, in short, being the cause of the sensations of both Light and Sound. The waves of sunlight, by means of the prism, may be separated from each other and spread out upon a screen, with the longest, or red waves, at one end, the shortest, or blue waves, at the other, and the intermediate gradations orderly arranged between the two extremes.

Color is, in fact, but a phenomenon of wave-length, just as higher and lower notes are the product of shorter or longer Sound-waves.

But there is a great interval, it is said, between the highest Sound and the lowest Color-wave; and another difficulty, in

* Quarterly Journal of Science, January, 1870; and Color and Sound, Dr. Macdonald, F.R.S.

the small range of but one octave which Color possesses, while Sound, taking a much wider range, extends over nearly eleven octaves.

But this difference is only one of degree; each scale is obedient to the same laws, though the vibrations of the one are so vastly more delicate and subtle than those of the other.

It is possible that a painting by Raphael, or the delicate play of colors on a pigeon's breast or on a shot-silk dress, may express as truly a Musical theme as one of Bach's fugues or a symphony by Beethoven. And although the relations causing the latter vary but from 100 to 3,000 times in a second, while in the former they pulsate from 500,000,000,000,000 to 700 million million times in the same period, still the precise relationship existing between the two scales may be so worked out that Painting and the coloring of dress shall be elevated to the status of a science based like Music upon mathematical principles.

The first step towards this definite analogy was discovered by Newton, who found the spaces occupied by the seven principal colors to be similar to the relative intervals between the seven musical notes comprising an octave. And recent investigation has shown that the actual ratio of sound wave-lengths to each other compare with the ratio to each other of wave-lengths of colored light.

New tables have appeared of the wave-lengths of different parts of the solar spectrum,* which require only to have the various wave-lengths reduced to a common ratio and compared with those of musical notes reduced to the same ratio to show a most marked correspondence.

The first column in the table here given represents the actual wave-length of the different *colors* as determined by Professor Listing; the second column gives the ratio of one set of wave-lengths to another taking 100 as the mean; the third column gives the wave-length in inches of the *notes of the middle octave;* the fourth, the ratio of one note to another, taking also as the mean 100.

A most remarkable table is the result, given as follows:

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* Transactions of the Royal Society of Upsala, 3d Series, vol. vi.

				Mean.						Mean.
Red waves are	685	of a millim.	in length,	100	C has waves	52	in.	in length,		100
Orange "	" 616	"	"	89	D "	46½	"	"		89
Yellow "	" 560	"	"	81	E "	42	"	"		80.8
Green "	" 513	"	"	75	F "	39	"	"		75
Blue "	" 456	"	"	66⅔	G "	35	"	"		67
Violet "	" 410	"	"	60	A "	31	"	"		60
Ultra-violet					B "	27½	"	"		53

And, doubtless, could we distinguish colors beyond the violet they would repeat themselves, and like the musical scale advance octave by octave with precisely similar notes. We have the high authority of Sir John Herschel and Professor Grassmann* in support of this inference.

The æsthetic analogy between Color and Sound, Painting and Music, is thus founded, and the intuition of this fact, to which Language is already a witness, proved to be truthful. "Loud," "*criard*," "*Schreiend*," appear identical expressions, applying in English, French and German both to glaring colors and forcible musical sounds.

"Tone" is a term both of coloring and of sounds.

"Dim" and "dumb" in Anglo-Saxon appear closely related, expressing feebleness to either voice or sight.

Max Müller's researches show that in Sanscrit the word "*Purûravas*," which means the same as πολυδευκής—endowed with much light—has a root (*ru*) which, although meaning originally "to cry," is applied also to color in the sense of a loud or crying color.† Thus it is said, "The fire cries with light"; and the rising sun, in the Veda, is said to "cry like a new-born child."

From time immemorial, indeed, the sister arts have gone hand in hand, and a genius for the one seems to have been inseparable from a genius for the other. The great masters in painting were often at the same time good musicians;

> "Not merely painters dwarfed in all their aims,
> But men who painted, builded, carved, wrote
> Whole diapasons, not a single note."—*Story.*

But this analogy must be carried further than similarity of production, than innate perception, or than agreement of

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* Philosophical Magazine, April, 1864.

† Chips from a German Workshop, vol. 2, p. 101.

ratios of wave-lengths, and an absolute identity be shown between the laws laid down by the masters of each art.

The identity in number of the seven notes in the visible prismatic scale and the seven notes of the musical scale already noticed, and the fact that the three principal colors—Red, Yellow, and Blue—which occur respectively on the first, third, and fifth intervals, and so answer to the chord admitted by all musicians to be the ground-work of harmony, strengthen the analogy.

The most pleasant combination of sounds next to that of unison is of a note and its octave, answering in painting to what is termed Reflection, where the expanse of color in the upper part of a picture is repeated, though in less extent at the foot.

The next combination of sounds in the scale of pleasurable sensations is formed by a note and its fifth, called from its predominance in Music "the Dominant," and answering in the Key of C to G: its analogue will be Blue. Then a note and its fourth, giving Red and Green.

In natural colors, these are the simplest and most accurate combinations. As a broad principle, it may be assumed that alternate colors produce common chords—Red, Yellow, and Blue, answering to C, E, and G; and Orange, Green, and Purple, to D, F, and A.

Given one note—C, for instance, supposed to be the analogue of Red—it should be supported by the other two either separately or in its *complementary* color, Green, answering to F. Purple should have its complementary Yellow, or be supported by Green and Orange.

Thus any key may afford examples, the working out of which will be of great service to those diffident of their own taste. For although good taste in dress, in the arrangement of flowers, and what is called *gusto* in painting, seem intuitive in the same manner as musical taste is a natural gift, yet an æsthetic rule may be most useful to those not so highly favored, and surprising results developed.

The juxtaposition of two colors nearly alike is distasteful to the eye, and, as adjacent notes sounded together, produce discord; suggesting that the indifference of yellow to green, red to orange, or blue to violet, is like the "beats" pro-

duced by sounding C and B together — the result of "*Interference.*"

To this is due the green appearance of blue when strongly contrasted with yellow or viewed in a yellow light, and the likeness of purple to red when placed in proximity to blue.

Colors have a knack of calling out — or, more correctly, *intensifying*—their complementary colors from white. This should be borne in mind in the choice of dress, and those colors avoided whose opposites are unbecoming to the complexion of the wearer. A red dress is apt to tinge a pale face with green, and a purple dress to render it yellow.

In practically working out this theory, and translating the mental music of a group of colors into the audible music of life, the suggestion may be valuable that the instrument most capable of producing parallel sensations is the Organ; the "Diapasons," the "Flute," the "Principal," and the "Swell," being necessary to represent Loudness, Force, and the Tone of pictorial effect.

Colors vary as much in *quality of tone* as do sounds of musical instruments. C on the Trumpet and on the Flute are the same note, yet how different in character and effect!

The Organ represents most instruments in imitation by its stops varying from the "15th" to the "stop diapason"; one being soft, another sweet, another coarse.

With Colors this is perhaps the most difficult subject in the whole inquiry; for whatever quality may be observed in a single Red, Crimson, Scarlet, Indian Red, or any other kind, a similar quality should pervade its own scale, and all the other colors should be akin to it.

Shades or gradations of color may be symbolized by semitones; thus C-sharp for cherry-color, F-sharp for greenish-blue, and so on.

The expression to be conveyed will regulate the choice of key, one with many sharps to signify joy or light and merry movement, whilst a minor approaching as it were by a low wail almost to discord will give the idea of deep and suppressed sorrow.

The pitch in sound, then, has its equivalent in the tint or hue of color; loudness of note corresponding to "loudness"

or depth of the color, higher octaves representing fainter and lighter-tinted hues.

Since any two colors complementary to each other produce *white*, white may be harmoniously used with any color; for wherever two such colors may be necessary to complete a full chord, white may be truthfully substituted.

In a general sense, the lower the refrangibility of a color the nearer it will appear to the eye, and the greater the refrangibility the greater the apparent distance. Thus, in Nature, red—the least refrangible color—predominates in the foreground; yellow, green, and the intermediate tints, lie in the middle distance; and blue, with every variety of grey, forms the background of mountains, vapors, and sky.

As in singing it is the invariable custom to add power to the voice in the upper notes of a song, thus producing artificially a larger volume of sound, so in Nature the grey or violet of distant mountains or sky is greatly in excess of the naturally lower and stronger notes of the red cottage-roof, the peasant's cloak, or red tree-trunk, that are more forward in position.

In such minute particulars is this analogy of sound and color strengthened that we look in vain to modern scientific researches for counter-evidence.

Certain chemical changes are attended by alteration of color, and when such is the case it invariably occurs in consecutive order, and either ascends or descends the scale; thus the green Iodide of Mercury under the action of heat yields a yellow sublimate, and subsequently becomes red. The red Iodide changes under the same condition from yellow to chrome and from yellow ochre to light-red.

Autumnal tints, descending the scale, may also admit some such analogy of cause and effect.

Spectrum analysis shows that new lines make their appearance in the spectra of certain elements when the temperature is increased. When, for instance, Lithium is heated a splendid blue band is obtaind in addition to the red and orange rays, showing that the undulations of this particular set of vibrations have become more intense.

The same phenomena are observed in the case of the Strontium spectrum, where no less than four red lines (ε, γ,

κ, λ) make their appearance on increasing the temperature of the metal.

Professor Roscoe* remarks that "The analogy between the production of these more highly refrangible rays and that of overtones, or harmonies of a vibrating string," must be patent.

M. Lecoq de Brisbandeau,† quoting also Plucker and Hittorf, notices similar results with the spectra of Azote, and finds strong analogies to musical harmonies.

From this discovery it is possible that the music of the spheres may no longer remain a mystery; it would only be necessary to write down the score of each star by spectrum analysis, and convert it into the corresponding musical chords, to realize how

> "Each smallest orb * * *
> In his motion like an angel sings."

The sensations of taste and smell may also be the result of appreciated vibrations, and pleasing combinations have some general law of harmonies to govern them.

Between the voice and temper of the speaker an analogy has long been supposed to exist,‡ and indeed theories of the kind have their foundation in scientific fact.

There is an approximation to a law of distances between one planet and another from the primary bearing a strong resemblance to a musical ratio, which gives us some clue guiding us into the Pythagorean idea of the music of the spheres. The distances between Mercury, Venus, the Earth, the group of Asteroids, Jupiter, Saturn, and Uranus, and from the Sun, are closely analogous to the distances between eight octaves in succession. So, too, the four visible moons which revolve around Jupiter bear in the ratio of their revolutions or vibrations to each other a resemblance to harmonical notes. The first moon revolves in 42 hours, the second in 85, the third passes through its phases in 170 hours, and the fourth in 416 hours — giving the following series for the number of hours required for one revolution: 42, 85, 170, 416,

* Spectrum Analysis, p. 144.

† On the Constitution of Luminous Spectra. Paris, 1870.

‡ Philosophical Transactions published in 1700. See Curiosities of Literature, by D'Israeli.

the longest time corresponding to the lowest note. By imagining some fixed time wherein to count the revolutions of these satelites, and calculating them for the sake of example by the number of vibrations per second producing musical notes, the second is found to correspond to the octave below the first, the third to the octave below that, and the fourth to the dominant or 5th of the fourth octave below the first.

Speculations of this kind are necessarily vague, yet not the less truthful. Again and again have the discoveries of a future day been first but dimly seen and faintly outlined. A strong effort of moral courage is required to overstep the bounds of approved philosophy and to start a new theory with all its necessary imperfections and difficulties. "Philosophical guesses" are often censured, and this regardless of the fact that all our best established theories were guesses once. Men in a former era give the clue, others follow it into the Labyrinth. What if some of these guesses prove wrong? The spirit of Investigation, the life of Science is aroused; and if the "Light," Goethe so earnestly prayed for, be given, the silent music of flowers, sunlight, and the stars, may not forever remain unheard.

INTRODUCTION TO SPECULATIVE LOGIC AND PHILOSOPHY.

By A. VERA.

CHAPTER IV. (*Continued.*)

§ 3. *On Ideas as the Essences of Things.*

If we admit that all things rest on a corresponding idea, the next question is whether idea constitutes the essence of things, or whether there is above idea a higher principle, of which idea would be only the *form*—a force, the inward nature of which we are unable to reach, issuing forth from the divine essence, or, to speak more accurately, constituting this very same essence. This is, I need hardly say, the decisive and crowning point of the problem. All those who have sufficiently attended to the subject concur in admitting that ideas are necessary elements of things, that they are eternal

and immutable, and that their origin must be traced to the Absolute. But are ideas so identical with the Absolute as to constitute his whole Being? Or is there, besides ideas, some principle or essence of which ideas would be only *forms* or *attributes?* This is the point upon which opinions are divided. For, according to some, ideas are only forms, modes, or attributes; according to others, they constitute both the form and the substance — the very nature of the Absolute. Now, the following are the reasons which, in my opinion, establish the second doctrine:

First of all, if it be true, as we have demonstrated, that thought and idea are inseparably connected, so much so that they suppose each other; that obscure force, or that undefinable substance which is held forth as the source and *substratum* of ideas, cannot be thought but through an idea, and an idea which is adequate to it. And, as it is admitted that idea is the *essential form* of things, it follows that the idea of this substance will be its essential form, and as absolute and eternal as the substance itself. The idea of a substance is consequently adequate to this very substance; which means that this substance is *thought* as it *is*, and cannot be otherwise than it is thought. Thus, for instance, if gravity be an essential form of matter, this latter must be attracted towards the centre, and, if gravity thought, it would think itself as necessarily attracted towards the centre. If God is the Perfect Being, or the Absolute Spirit, &c. &c., he must think himself as such, and, *vice versa*, he must *be* as he thinks himself. This shows how deeply idea is involved in the inward and substantial nature of things. And this connection will become still more manifest if we consider the whole idea—I mean each idea in the whole range of its qualities and relations; if we describe and determine, for instance, the various and general properties of the triangle, or of organism, or of the soul. For one cannot see then what other character or substance may exist besides and above idea.

The difficulty we find in apprehending the true and complete nature of ideas is to be attributed, in a great measure, to the arbitrary selection I have pointed out*—a solution

* See preceding section.

circumscribing the sphere of ideas, assigning ideas to one order of beings and withholding them from another, and leading thereby to the conclusion that this latter must rest on other principles than the former. For example, suppose any one admitting the idea of the Beautiful, and that it is this idea which imparts to the work of art its beauty,—if he do not admit at the same time the idea of matter, this he must derive from another source, and in this case the idea of the Beautiful will only possess, in his opinion, the power of stamping matter with a certain form. Again, it will be admitted that the operation of the mind must be performed according to certain fixed and invariable laws, i.e. ideas. But if we do not admit at the same time the idea of the *thinking subject* or of the *Self*, this also must be derived from some other principle or essence than idea, and then the laws or ideas which govern the mind will be only *forms*. It is the same process and mode of arguing we make use of in considering the nature of God; for we will fain acknowledge that ideas are inseparable from God's nature. But here also we argue with regard to God as we do with regard to the Self. And as we refer the Self and ideas to distinct principles, so likewise we separate in God ideas from his being and substance. But if there be the idea of the Self, there must be also the idea of God, and God cannot be and think himself but according to this idea. And when we endeavor to grasp the divine essence, and we think we soar above the sphere of ideas by attributing to God Consciousness, Personality, Goodness, Ubiquity, &c., we in reality are gathering merely ideal elements to build up the nature of God. Now these and similar elements must represent the real and objective nature of God, otherwise we would make up the nature of God of mere words and shadows. And, in saying that *they represent God*, I do not mean to say that they are only symbols or images, but component parts and elements, of his essence. For if we realize the *Being* of God as differing from the *Thought* of God, we are drawn into the same difficulty; and this difficulty does not only affect the human but the divine thought also. In fact, if Being and Thought be separated in God, or if the idea of God be not identical with his essence, the unity of the divine nature will be

broken, and neither God in thinking himself nor man in thinking God will think God, but a shadow of God—in fact, anything but God. Consequently, thought in God, or the thought of God, is identical with his Being; it is his Being intellectualized, if I am allowed the expression. But if there be, it might be objected, as you assert, a stage of existence where *thought* and *being* become identical, the thought of a thing would not differ from its being, and consequently to *think* happiness would be *to be* happy, to *think* the Good would be *to be* good, and so forth. Now this is not only at variance with language, but with vulgar and daily experience, as we think happiness without being happy, and the Good without being good.

This objection, which at first sight seems unanswerable, but which we have already implicitly considered, rests on an erroneous notion of the nature of Science and ideas, as well as on an inaccurate observation of experience itself. In fact, even if we confine ourselves within the limits of experience and of *subjective* thought, we shall see that if the thought of a thing is not the whole thing, it is at least its starting-point or its essential condition. Thus one is not happy and good unless he seeks after happiness and the good, i.e. not unless he thinks them; so that by abolishing the thought of them we would abolish the seeking after them, and consequently their possession and the sentiment attached to it.

However, this is not the proper way of viewing the question; for the essential and decisive point is whether there are absolute thoughts or absolute ideas of good and happiness, and whether these ideas be the principles from which the imperfect and individual good and happiness are derived. It little matters, then, that such individual should think happiness without being happy, or that happiness should assume different forms and vary with the different individuals, or that it be realized only in a certain number of individuals and in a certain sphere of existence. For from the fact of there being an idea of happiness, it does not follow that all must be happy, or that all must be equally so, no more than it does follow that all must possess beauty because there is an idea of the Beautiful, or that all bodies must be luminous because there is the idea of Light. It is rather the contrary

that must take place, and this because ideas determine each other, and can each of them fill up only a limited province and sphere in the whole system.

But here the difficulty principally arises from the mistake created by the confusion of *individual* and *subjective* with *universal* and *objective* thought, or of thought accidental with thought necessary and absolute. To think accidentally the triangle or the solar system is not *to be* either the triangle or the solar system. But the essential point is to know whether, besides the idea, the eternal and objective thought of the triangle or of the solar system, there can be another and higher essence of these beings. And if, to establish this latter opinion, we appeal to individual consciousness and experience, we do not only place ourselves without the pale of Science, but we are necessarily led to a result contrary to that which we aim at. In fact, we will not admit that ideas constitute the ultimate principles of things, and we raise above ideas *being* and *essence*, apparently on the ground that the notion* we form of the Absolute surpasses the region of ideas, and then we transfer to this essence the *data* of psychological experience, and make absolute consciousness in the image of individual consciousness. Now, to form such a conception of the Absolute is to deny it. For if God thinks as I do think in the capacity of a finite and individual being—if my individual consciousness is the type according to which I must represent to myself absolute consciousness,—God is finite and imperfect like myself. And it will be in vain for me, in order to reach the absolute, to combine such imperfect elements, to add to or to subtract from them, or to enlarge them indefinitely, so as to make up by their aggregate the notion of God; for I shall not be able to overstep the limits of the finite and the imperfect. Consequently, the principle to be laid down is not that God is such a thought, or such a will, or such a personality, but thought, will, and

* This shows the inconsistency involved in all doctrine rejecting Idealism. For when we pretend that ideas are not the essences of things we must base our opinion on some rational ground, and this rational ground must need be some *notion* we have formed of essences and principles; which means that in rejecting ideas we make use of them, and that the very arguments and reasonings by which we pretend to overthrow idealism rest on some *idea* from which they derive whatever value they possess.

personality, or the idea of thought, of will, and personality.

Again, the argument which is put forth to prove the distinction of *idea* and *being*, namely, that we possess the consciousness of *thinking* — of *thinking* light, for instance, without the consciousness of *being* light — nay, that we feel conscious that the *being* of light is totally different from the *thinking* of it; this argument, I say, is to no purpose. For, as we have already observed, either there is a consubstantial connection between the thought and the being of light, or there is none. If we admit the latter position, we may say that in the thought of light there is no apprehension of real light but a mere delusion. Moreover, we ought to bear in mind that here the question does not turn upon individual existence, or any contingent and particular phenomenon, but upon essences and principles—a point which we lose sight of when we appeal to observation, self-consciousness, and sentiment. For essences, let them be ideas or any other principles, can be *thought*, but cannot be *felt*. And, far from their coming within the apprehension of sentiment, we must rise above the sphere of sentiment, of observation, and individual consciousness, to contemplate them in the purity and reality of their immutable and eternal nature. Thus, for instance, when we inquire into the nature of the soul, it is not a soul, but *the* soul we purpose knowing; and we do not think we possess the science of the soul until we have attained such a knowledge. And having attained it, it is not necessary that we should *be* such or such individual soul, or that we should *feel* so, to apprehend its being and qualities. On the contrary, the sentiment of the individual soul would dim the perception of the soul, depriving thereby the mind of the criterion by which the individual soul itself can be known. Thus to think the soul, the triangle, light, organism, &c., is, in the highest acceptation of the word, to *think* and *to be* all these objects. And this identity of idea and essence will be more clearly perceived by considering the nature of God. In fact, we hold that God is the ultimate principle of things, of Nature as well as of Spirit; of matter, light, &c., as well as of justice, liberty, good, &c. Now, either these words are destitute of all meaning, or they mean that God is all beings in general

without being any individually, and consequently that essences are merely *intelligible* elements, principles that pure and speculative thought alone can reach, and transcending the region of sentiment, of self-consciousness, and experience.

§ 4. *Idea as the Ultimate Reason of Things.**

If ideas and essences are, as we pretend, identical, it follows that ideas contain the *why* and the ultimate reason of things. Why are there organic beings, or such a function or property in organism? Or, why do bodies move? and, what is the reason why they cannot move but in time and space, swiftly or slowly, or in a certain direction? Why such a phenomenon, or such a sensation? Or, what is the ultimate reason of the union of the soul and the body? The answer to these and similar queries will be derived from ideas, namely, that the body and the soul are united because there is the idea of such a union, and that they are united conformably to such idea; or that there are organic beings, phenomena, movements, because there are ideas of organism, phenomena, and motion. Such a doctrine, I know, we are unwilling to admit, and this for the same reason we object to assigning ideas to all things. Here also we are wont to make a solution, and explain one order of facts and beings by ideas, and another by some other principle. When asked, for instance, why such an action is good, or such a conception right, or such a thing beautiful, we answer that they are so because they are conformable to certain ideas of justice, truth, and beauty; which means that whatever justice, truth and beauty is in them they borrow from these ideas. But if any one hold that the ultimate reason of sensation, of organism, of the union of the body and the soul, lies in ideas, we will not listen to him, and will reject his doctrine as possessing

* I need not remind the reader that in this and the preceding section I have considered all questions relating to ideas in their abstract and general form, and confined myself to showing in a general manner the necessity and nature of ideas without determining the nature of any particular idea, and this because such an inquiry belongs to particular branches of Philosophy. For instance, the idea of Religion belongs to the Philosophy of Religion, as the ideas of time, space, light, &c., come within the province of the Philosophy of Nature. Moreover, the value and meaning of ideas cannot be apprehended unless each idea is systematically deduced.

no meaning, and substituting mere and empty words for real and substantial causes. It is, as we may say, the same inconsistency we fall into. For if we give as ultimate reason of the justice of actions the idea of justice, we must also acknowledge idea as the ultimate reason of the union of the body and the soul; or, if we reject the latter, we must reject the former also. Therefore, for the very reason we admit other ideas, we must admit the idea of the soul and the idea of the body, and then the idea of their mutual communication. All the explanations contrived on the subject—the hypothesis of a *plastic mediator* (Cudworth), or that of *physical influx* (Euler), or that of *occasional causes* (Cartesius), or that of *preëstablished harmony* (Leibnitz)—are but various expressions of one and the same conception, namely, that there is an intermediate principle or essence by and according to which the soul and the body are united. The theories of *preëstablished harmony* and of *occasional causes*, which seem to point to another solution inasmuch as they seem to place the principle of this union in the power and will of God, rest, when attentively examined, on no other foundation. In fact, the divine will is not an arbitrary and contingent will, but finds its rule and guidance in the laws of God's nature, which are nothing else than the very essence of things. And this is proved by the fact, that even those who would attribute to God a contingent will and liberty—a liberty of choice or of indifference, as they name it—are compelled by a rational necessity to place above these attributes the nature itself of God, and acknowledge that God acts, and cannot but act, according to the laws of his nature. Therefore, it would be no explanation, or at least it would not be to give the ultimate reason, to say that the soul and the body are united because God has willed it; but we must go beyond this, and say that he has willed it because this union is conformable to the laws of his reason and wisdom, and that he has willed it but in conformity with these laws: which means, in other words, that there is in God's nature a certain idea, a certain essence, where the two substances are eternally and absolutely united, which ideal union is the ultimate reason of their actual communication. In fact, the ultimate reason of a thing is that internal and ideal necessity which makes the

thing what it is, and that it cannot be otherwise than it is; and this is its essence. And it must be remarked that when we have attained that degree of knowledge, we cannot proceed further and inquire for a higher reason. Thus, for instance, it would be illogical to ask why bodies fall, should it have been demonstrated that gravity is their essence. And all attempts to answer the question would prove vain, or would lead to the begging of the question. This explains also why it is irrational to ask the reason of the existence of God. For God is essence and absolute necessity; and in this respect what can be said of him is, *that God is because he is.*

These remarks may be easily applied to other ideas. Let us take life, for instance. All physiologists tacitly admit the idea of life: for when they investigate the laws of living nature and strive to determine their essential character and condition, it is in reality the idea of life they aim at, as it is this very same idea looming, so to speak, before them that guides them through their inquiry. But being unaccustomed to pure speculation, and unable to set their mind free from images and material representations, they expect to derive from observation and experience that which from speculation alone can be derived, thereby obtaining facts and consequences which they mistake for causes and principles. They are thus led to *materialize* ideas, and to seek the principle of life, some in animalcules (*infusoria*), a kind of material types by which are engendered all living beings; others, like Buffon, in an organic substance spread from eternity through the Universe, and stamped in succession with limited and individual forms. In reality, what they have in view is idea — a purely intelligible principle by which all *living* beings are produced, as all particular good emanates from the Good, and all particular beauty from the Beautiful. Of this principle they possess a presentiment, a glimpse as it were; but they are unable to reach it in their real and absolute existence.

§ 5. *Idea is Force.*

This is a consequence naturally flowing from the preceding considerations. For, if idea be essence and the ultimate

reason of things, it is also force, and the force the most irresistible, which may be called also necessity. The force that produces the plant, and according to which the plant grows and dies, is its idea. The real and absolute germ is not the individual and external germ we touch and see, but the idea by which the external germ is created and endowed with the necessary force for its growth and preservation. The force which every being is possessed of, as well as the *form* or law according to which it acts and displays its powers, lies in its very nature, i.e. in its idea. The difference of forces is owing to the difference of ideas. Matter is a force, and the soul is a force, and, as forces, they are the product of one and the same idea, and both produce similar effects; for instance, the soul moves the body, and a body moves another body. Their difference is to be found in their specific elements, or in what constitutes their special idea: for instance, space and time, extent, attraction and repulsion, &c., for matter; imagination, will, thought, &c., for the soul. Or, to quote another example, matter in its mechanical and matter in its chemical state are both force, which are only diversified by their specific typical structure. As idea is force, and the source of all forces, so the permanency and preservation of force do not rest on any *quantitative* (mathematical) formula or conception, such as, for instance, the quantitative absorption and reproduction of force, but in the permanency and immutability of its principle. For instance, with regard to the falling of bodies we may ask the question, whence comes the force that makes the body fall, and what becomes of the force that has been thus expended in producing the fall? Perhaps it will be said that the force is inherent in the body that falls, and that the amount of force that body employs in falling is absorbed by other bodies, which in their turn reproduce it, thus forming a circle — an alternate movement of absorption and reproduction, in which, the loss and the gain being balanced, there would be no actual deperdition of force. Now this explanation, even were it correct, does not reach the real and ultimate source of the permanency of gravity. The absorption and reproduction, the *quantity* of force absorbed, and the *quantity* of force reproduced, are subordinate states or forms of force, and are depending on its very

nature and essence. Let us suppose the whole of the force of gravity in the Universe to be = 1,000, and this sum to be equally divided among say 100 masses, and this in such a way as, when one of these masses expends its 10th part, this is to be absorbed and preserved by the others; and, as we may suppose also that each mass is continuously supplying its share of force, there would be in the whole system an uninterrupted reciprocation of forces, absorbed and reproduced. Now it is clear that the permanency of the fact rests on the permanency of the principle that produces it, and that if there be no diminution in the quantity of force it is because its principle—its idea—is liable to no deterioration.

Mathematical formulæ symbolizing the law of gravity, or any other law, possess a real and rational value, in their abstract and general form, on the condition only that they are the expression of an absolute idea, independent of all phenomena of gravity, and to which these very phenomena owe their existence. When we say that force is inherent in matter, we use an expression which conveys a correct idea neither of matter nor of force; for it represents matter and force — or the force that is in matter — as things separable, whereas they are inseparable. Such is, in fact, the ordinary mode of viewing matter and force. We place matter on one side, so to speak, and force on the other, realizing the former as complete of itself, or as possessing its being and its essential qualities without the force of gravity, and the latter as something extraneous and superinduced; and this on the ground that we can conceive matter without such a force, from which we draw the consequence, or rather the assumption, that matter would not cease to exist even were the force of gravity subtracted from it. According to this view, gravity becomes a mere law of matter, as it is called; a certain form imprinted, as it were, upon matter, but neither matter itself nor an essential and component element of it. Now, if we give the subject the proper attention, we shall see that *Being* and *Force* are inseparable; that *Being* destitute of Force is no Being, and that *Force* possessing no Being is no Force. By Being I mean here that which constitutes a thing, and without which it could neither exist nor be conceived. What to an inaccurate observer often appears as an

accidental or external *form*, is in reality an integral element of a being's nature, as integral as its substance, and consequently is itself a force. For instance, thought and the forms of thought are inseparable, so that thought could neither be or act without forms, nor could these be or act without thought. So likewise in the body form and matter are so interwoven that whatever force is in it springs from the association of both; so much so, that, were either of them annihilated, being and force would be at once annihilated in the body. And so it is with all things. Consequently, gravity, attraction and repulsion, motion, &c., are not *forces* and *forms* added to, but essential elements of, matter; they are not forces acting upon the molecules, as one is wont to realize them, but forces that constitute the molecules and matter.

The doctrine that resolves matter into atoms or indivisible molecules, representing the latter as coalescing under the action of an additional and extraneous force,* cannot be supported on any experimental or speculative grounds. In fact, experience nowhere shows the existence of such elements; indeed, according to experience, matter would be indefinitely divisible, and there would be no such indivisible principles. Nor is the atomistic doctrine more justifiable on theoretic grounds; for either atoms are absolutely formless, or they possess a form—polarity, or weight, or volume, &c. In the first hypothesis, they are phantoms of the imagination, or rather empty words, as nothing could be affirmed or thought of them; not even that they are indivisible, indivisibility being a manner or form of being. If they are endowed with a form, this form constitutes with their substance, and as well as their substance, their inward and inseparable force. Whence it follows—1°. That force is not superinduced, but is one of their constitutive elements. In fact, if we consider extent, or the filling up of space in matter, we shall see that it presupposes both attraction and repulsion, and that it presupposes them as generating principles of matter; for if we suppress attraction there will be nothing to repel, and if we suppress repulsion there will be nothing to attract. 2°. That *force* and *form*, be it *extent*, or *weight*, or whatever it may

* *Molecular forces.*

be, are the common properties of all such pretended atoms, or of all parts of matter; which means that there is a common principle—an idea—from which all parts of matter borrow whatever force or any other quality they possess.

If I have dwelt at some length on the idea of matter to show that idea is force, it is to have the opportunity of pointing out the inconsistencies and errors into which the Philosophy of Nature is necessarily drawn, the arbitrary and artificial theories to which it is obliged to resort when it attempts to explain Nature, its forces and laws, by any other principles than ideas. Yet such is the aversion of the Natural Philosopher to ideas, that he will prefer inconsistencies, or any irrational and untenable theory to Idealism. He must use ideas, for he cannot advance a step without their assistance, and he must use them to prop up his own theories; but he will look with suspicion, nay, with contempt, upon any doctrine teaching that ideas are realities, forces, and principles. Thus, for instance, instead of acknowledging the ideas of organism and generation, he will have recourse to hypotheses such as the engrafting of organism upon organism (*epigenesis*), or to the concentric envelopment of germs (*emboîtement des germes*), or to spontaneous generation (*generatio primaria, spontanea*), or perhaps to the will of God. Now these and similar hypotheses explain nothing, or, if there be any meaning in them, this they draw from some idea, and consequently they are rational and correct inasmuch as and to the extent in which the idea is so. In fact, the will of God, when set forth as the ultimate reason of things, is the *Deus ex machina*, which, for the very reason that it may be used for all purposes, in reality demonstrates nothing. For a principle which may arbitrarily and indiscriminately be brought forward to explain the motion of my arm as well as the motion of the Sun, or any other order of phenomena, is no principle at all, and no Science can be founded upon it. Moreover, the will of God, as we have already observed—and the will of God more absolutely than any other will—must be ruled by law, and by an absolute law, which law is at once the essence of things and a part of God's nature.

As to *spontaneous* generation, if by *spontaneous* it is

meant that things—phenomena, individuals—are produced, or do produce themselves, without any previous and independent cause or principle that produces them, this is equal to saying that they come from nought. In any other sense, spontaneity presupposes a preëxistent principle, and therefore explains nothing. The same applies to epigenetic generation, and to the collateral hypothesis of the concentric involution of germs; for, even granting that the germ be endowed with an inexhaustible power of begetting similar individuals, or that it should contain, like some infinitesimal quantity, an infinite number of germs, such hypotheses will explain neither the initial germ, nor the unity of the species, nor even the grown up and complete individual. For the complete individual is not the germ, and though it may be supposed to be potentially involved in the germ, as the whole picture is involved in its outline, yet there are additional elements, properties, and processes, through which only its full growth can be accomplished. Besides, the germ cannot constitute the species, for the production as well as the relation of germs can only be explained by a distinct and separate principle. To say that the various germs or individuals are issuing from a common stock, and then to realize this common stock as an individual—the various plants from an individual plant, for instance, or men from a primitive man—is to say that this individual being is at once the individual, the species, and the genus. Now let us suppose the fact to be so; let us suppose that there was a primitive germ or individual from which all subsequent germs or individuals have sprung. It is evident that there would have been two natures involved in the nature of such individual, namely, its own individual nature coupled with the common and general, i.e. the species. Now, if we suppress in the supposed individual its individual, limited, and perishable nature, what will be left in it is the common and universal nature, or the generating principle of all subsequent and similar individuals. And if we add to this that the supposed individual must be itself the product of a principle which embraces both the individual and the common nature, we shall arrive at the conclusion that here also idea constitutes the commou

stock, and the ultimate principle to which the individual, the species, and the genus, owe their origin and existence.

The fact is, the Natural Philosopher, if consistent, cannot escape Idealism; for he cannot even think force in general, or any particular force, such as gravity, light, &c., without ideas. And, when he comes to consider the *objective* nature of forces, if he rejects Idealism, he will be obliged to adopt *Nominalism*, and to realize force either as an empty word—*flatus vocis*—or, like Kant, as a merely *subjective* form of thought; or to divide force and scatter it into infinitesimal divisions, i.e. to adopt *Atomism;* or to substitute mathematical quantities and formulæ for physical forces;—which means, in other words, that the Natural Philosopher, by rejecting Idealism, raises insurmountable difficulties, nay, he contradicts himself, and brings about a result opposite to that which he is aiming at. For he rejects Idealism on the ground that idea, in his opinion, is not a real principle, an essence, a force, and then he builds up forces and beings with merely *subjective* elements, with empty sounds, or with mathematical formulæ; in other words, with materials either destitute of all reality and force, or deriving from ideas all the reality and force they may possess.*

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* *Has vires* (attraction and repulsion), says Newton, *non Physice sed Mathematice tantum considero.* (Phil. Nat. Princ. Math., Defin. VIII.)—These words show that, in the opinion of Newton, there are two essential elements of which gravity consists, namely, the Physical and the Mathematical. It is not my object to examine here the purport of this division, or whether it is conformable to a strictly rational and scientific method to divide a being, substance, or force, into two parts, to consider one and to leave off the other. Here, confining myself to the present subject, I will only observe that if the Natural Philosopher admit that the mathematical element is an integral part of force, he cannot without inconsistency reject Idealism, as the pure mathematical element is nothing but idea. If, on the contrary, he consider force as independent of mathematical notions, his formulæ and combinations possess no value whatever, nay, they are delusive and fallacious, as they create the belief that mathematical notions constitute a real element of force. (See on this question my *Introduction to the Philosophy of Nature*, of Hegel, vol. 1.)

THOUGHTS ON THE INTELLECT

IN GENERAL AND IN EVERY RELATION.

Translated from the German of ARTHUR SCHOPENHAUER by CHARLES JOSÉFÉ, M.D.

(Chapter III. of the "Parerga and Paralipomena.")

§ 27. Every procedure in philosophy pretending to be without any presupposition is nothing but boasting, for we always must regard something as given in order to proceed from it. This is what is meant by the δός μοι τοῦ στῷ, which is the indispensable condition of every human operation, even of philosophy, because we neither mentally nor bodily are able to float in the pure ether. But such a point of procedure of philosophising, which we meanwhile have assumed as given, must afterwards again be compensated and justified. It either will be something *subjective*, as perhaps the self-consciousness, the imagination, the subject, the will; or it will be something *objective*, something that represents itself in the consciousness of other things, as the real world, the objects exterior to us, nature, matter, atoms, even a god, even a mere idea thought out at leisure as the substance, the absolute, or whatever it may be. Now, so as to make up for the arbitrariness committed with this, and to rectify the presupposition, we must change aftewards the *stand-point* and proceed to the opposite, from which we now derive, in a supplementary philosopheme, that which at first had been assumed: *sic res accendunt lumina rebus.* If, for instance, we proceed from the subjective, as did Berkeley, Locke, and Kant, with whom this manner of reflection reached its height, then we shall become possessed of a philosophy which is partly very one-sided (although, on account of the immediateness of the subjective, this way has the greatest advantages), yet it is not wholly justified unless we supply the deficiency by taking once more the conclusion as the point of departure, and thus from the opposite stand-point derive the subjective from the objective, as we did before the objective from the subjective. This completion of the philosophy of Kant I believe I have given in outline in the twenty-second chapter of the second volume of my principal work,

and in the "Will in Nature," under the title of "Physiology of Plants," where I, proceeding from external nature, derived the intellect.

But if, on the contrary, we proceed from the objective, and immediately assume much as given—as, for instance, matter—together with the powers as manifesting themselves in it, then we soon have the whole nature, as such a mode of contemplation gives the mere naturalism, which I more accurately called *absolute Physics.* The laws and powers of nature, together with matter in which they inhere, constitute here the given, and consequently the absolute real, taken generally; but regarded specially, as innumerable suns and planets, floating in infinite space. These are therefore, as the result, everywhere, nothing but balls, a part of which are shining, the rest illuminated. Upon the last, life has unfolded itself in consequence of a process of putrefaction, which, in gradual succession, produces temporary organic beings, rising and perishing through generation and death according to the laws of nature governing the power of life, which, like all the others, make up the reigning (and from eternity to eternity) existing order of things, without beginning or end, and without giving account of themselves. The highest point of this succession is occupied by man, whose existence also has a beginning, in its course many and great miseries, few and parsimoniously granted joys, and after this, like everything, has an end; after which it is as if it never had been. Our absolute physics, which here governs the contemplation and plays the part of philosophy, now explains to us how, according to those absolutely existing and valid laws of nature, one phenomenon constantly brings on the other or supplants it; everything here goes on very naturally, and consequently is perfectly clear and intelligible; so that we may apply to the whole of the thus explained world a phrase which Fichte used to express with deep, earnest, imposing accents, and a mien exceedingly perplexing to students, whenever he displayed his dramatic talents at the lecturing-desk, thus: "It is because it is, and is as it is because it is thus." Consequently, it would seem to be a mere freak, from this stand-point, if one sought still for other explanations of a world which has been made clear in a

wholly imaginary metaphysics, upon which again morals have been put, which, as they are not to be confirmed by physics, would have their only support in those fictions of metaphysics. From this arises the marked disdain with which natural philosophers look upon metaphysics. But, in spite of all the self-sufficiency of this merely objective mode of philosophising, the one-sidedness of the stand-point and the necessity of changing it, to make the object of investigation the recognizing subject, together with its faculty of recognizing, in which alone all these worlds, first of all, are present, will declare itself sooner or later, and under many forms and motives. Thus, for instance, at the foundation of the expression of the Christian mystics, who call the human intellect the light of nature, which they in a higher instance declare to be incompetent, lies the recognition that the validity of all such cognitions can be only a relative and conditional one, but not an absolute, for which, on the contrary, our present rationalists take it; who, just on account of this, disdain the deep mysteries of Christianity, as the natural philosophers disdain metaphysics; take the dogma of original sin to be a superstition, because their Pelagian common-sense has happily found out that one is not responsible for the sin of somebody else six thousand years before him. For the rationalist confidently follows his light of nature, and thinks therefore in all earnestness that he, forty or fifty years ago, was absolutely nothing, and afterwards originated from nought; for only in this way can he free himself from responsibility, that sinner and inheritor of sin!

Thus, as we have said, speculation, following objective cognition in many ways, but mostly in the unavoidable philosophical one, will begin to understand that the wisdom which was obtained on the objective side must be taken on credit of the human intellect, which for all that has its own form, functions, and manner of representing things, consequently must be entirely conditioned by it; from which follows the necessity of changing the stand-point, and of exchanging the objective procedure for the subjective one, that is, to take it once as subject of investigation, and to institute an examination into the authority of the intellect, which till now confi-

dently erected its dogmatism and with the greatest boldness judged *à priori* of the world and all things in it, even of its possibility. This brings us, first of all, to Locke; then it leads us to the Critic of Pure Reason, and lastly to the recognition that the light of nature is directed only towards the external, and that this, if it would bend itself back and illuminate its own internal, cannot do it, consequently cannot disperse immediately the obscurity which there prevails, but only receives with great difficulty a mediate knowledge of its own mechanism and its own nature by following the sideway of reflection which those philosophers have taken. But after this it will become clear to the intellect, that it from the beginning is destined to the comprehension of mere relations, which suffices to the service of an individual will; that it consequently is mainly directed towards the external, and even that it then is only a superficial power, like electricity; i.e. it only comprehends the surface of things, but does not penetrate into their interior, and therefore cannot understand or discern thoroughly and from the foundation a single nor the most simple of all these beings; though they are real and objectively clear to it, rather the main thing remains in all and everything a secret to it. This now will lead him to the deeper understanding which the name of idealism expresses, namely, that that objective world and its order, as it conceives them with its operations, is not unconditionally and in itself existing, but originates by means of the functions of the brain, and consequently exists first of all in this, and furthermore has in this form only a conditional and relative existence, therefore is only a mere phenomenon, mere manifestation. If up to this time man has investigated the reasons of his own existence, whereby he presupposes the laws of cognition, of thinking, and of experience, to be purely objective in themselves and absolutely existing, and only by means of these himself and everything else to be, then he now recognizes that, on the contrary, his intellect, consequently also his existence, is the condition of all those laws and whatever follows from them. Then at last he will also understand that the ideality of space, time, and causality, now clear to him, will leave room for a wholly different order

of things than that of nature, which last however he is obliged to regard as the result or the hieroglyph of the former.

§ 28. How little in general the human intellect is qualified for philosophical reflection is exhibited, among other ways, in this, that now too, after all that has been said on the subject since Descartes, realism still confidently appears against idealism with the naive assertion that bodies not only existed in our imagination, but were also really and truly extant. But just this reality itself, this way and manner of existence, together with all that it contains, is just the thing, of which we assert it exists only in the imagination, and is nowhere else to be found, because it is only a certain necessary order of the combination of our conceptions. Notwithstanding all that former idealists, especially Berkeley, have said, it is only through Kant that we reach a real profound conviction of it; because he does not settle the matter with one stroke, but descends into the particulars, distinguishes that which is *à priori*, and accounts everywhere for the empirical element. But to him who has once comprehended the ideality of the world, the assertion appears really senseless that such a one could be present, even if nobody imagined it, because it expresses a contradiction; for its being present only means its being imagined. Its existence itself lies in the imagination of the subject. This is the significance of the expression: It is object.* In consequence of this, the older and better religions—that is, Brahminism and Buddhism—place, throughout, idealism at the foundation of their teachings, and require therefore its recognition by the people. Judaism, on the contrary, is a genuine concentration and consolidation of realism.

An innovation, introduced by Fichte and since reproduced, lies in the expression, the Ego. Here, namely, the mainly and absolutely subjective becomes changed into the object by means of the substantive form of expression and the prefixed article. For, in truth, "the Ego" signifies the subjective

* If I look at any object—for instance, a prospect—and imagine I should be decapitated in this moment, then I know that the object would remain unmoved and undisturbed. But this only implies at bottom that I likewise would be there. This will be clear only to few, but for these few it may be said.

as such, which therefore never can become object, namely, that which recognizes, in opposition to and as condition of all that which is recognized. The wisdom of all languages has expressed this by not treating Ego as substantive; therefore Fichte had to do violence to the language so as to be able to carry out his intention. A still more bold innovation by this same Fichte is the insolent abuse he has carried on with the word "posit" (*setzen*), which, instead of being censured and exploded, is still in full use up to this day, as a standing expedient for sophisms and fallacious teachings, with nearly all dabblers in philosophy after his example and on his authority. To posit (*ponere*, whence *propositio*) is, from olden times a purely logical expression, which signifies that one, in the logical frame-work of a disputation or other discussion, meanwhile admits something as being true, presupposes it, confirms it, and thus gives it in the interim logical validity and formal truth, whereby its reality, material truth and real existence remain perfectly undecided and untouched. But Fichte by-and-bye obtained surreptitiously for this "posit" a real, but naturally dark and obscure meaning, which the simpletons let pass and the sophists continually used: since, namely, the Ego posited first itself and afterwards the non-Ego, positing comes to signify as much a creating, a producing, in short, to posit in the world, one knows not how, and everything what one without reasons would like to assume as existing and impose upon others, is then posited, and then it stands, and is there, wholly real. This is the method still recurring in the so-called post-Kantian philosophy, and is the work of Fichte.

§ 29. The *ideality of time*, discovered by Kant, is, properly speaking, contained already in the mechanical law of inertia; for what this expresses is, in truth, that mere time is not able to produce any physical effect, in consequence of which it, for itself and alone, does not alter anything in the rest or motion of a body. From this it naturally follows that it is not something physically real, but something transcendentally ideal, i.e that it has its source not in the thing but in the recognizing subject. Did it inhere, as a property or accidence, to things themselves and in themselves, then its quantity—that is, its length or shortness—would be able to

change something in them. But this it cannot do; rather it passes over things without leaving the slightest trace. For only the *causes* are efficacious in the course of time, but not at all time itself. Therefore, if a body is withdrawn from all chemical influences—as, for instance, the mammoth in the ice of the Lena, the fly in amber, a precious metal in a perfectly dry air, Egyptian antiquities (wigs even) in the dry tomb formed in the rocks—thousands of years do not affect or change them in the least. The absolute inefficacy of time therefore it is which, in mechanics, appears as the law of inertia. If a body is once set in motion, no time can take the motion away from it, or even diminish it: it is absolutely endless, if physical causes do not counteract it; just as a body at rest will rest to all eternity, if no physical causes enter to put it in motion. From this it follows that time is something which has no relation to bodies, nay, that the two are heterogeneous in nature; that reality which belongs to bodies cannot be attributed to time, hence this latter is absolutely ideal, i.e. belongs to the mere imagination and its apparatus; while, on the contrary, bodies show, by the manifold variety of their qualities and their effects, that they are not only ideal, but that at the same time something objectively real, a thing in itself, manifests itself in them, however different the thing in itself may be from this its appearance.

Motion is, first of all, a mere phoronomic occurrence, i.e. one whose elements are all taken from time and space alone: matter is that which is movable; it is already objectivation of the thing in itself. But now its absolute indifference towards motion and rest, by virtue of which, as soon as it has taken the one or the other, it will remain in it forever, and just as well is ready to fly through all eternity as to rest for all time, proves that space and time, and the contraries of motion and rest originating purely from them, do not at all belong to the thing in itself, which exhibits itself as matter and gives it all its forces, but rather are perfectly extraneous to it, consequently did not come into the phenomenon from that which manifests itself, but from the intellect conceiving them, to which they, as its forms, belong.

Let him who would form a lively image of the here mentioned law of inertia imagine himself to be standing on the

edge of the world, before empty space, and to fire a pistol into it. The ball will fly through all eternity with an unchanged direction; billions of years will never tire it, never will it be in want of space to fly farther, nor will it ever want time for this. Add that we know all this *à priori*, and are therefore perfectly sure. I think the transcendental ideality, i.e. the cerebral phantasmagoria, of the whole thing is here exceedingly perceptible.

A contemplation of space, analogous and parallel to the foregoing one of time, could perhaps be attached to this, that matter, through all division extending it, or also through pressing it together in space, can become neither increased nor diminished; as also in this, that in absolute space rest and right-line motion fall phoronomically together, and are one and the same.

An anticipation of Kant's teaching of the ideality of time shows itself in many sentences of the elder philosophers, of which I have already collected what is necessary in another place. Spinoza says without hesitation: "*Tempus non est affectio rerum, sed tantum merus modus cogitandi.*" (Cogitata Metaphysica, C. 4.) Properly speaking, the consciousness of the ideality of time lies even at the foundation of the ever-existing notion of eternity. This, namely, is really the opposite of time, and thus all who understood it have constantly conceived of it, something they only could do in consequence of the feeling that time dies in our intellect only, not in the essence of things themselves. Only the want of sense on the part of the wholly incompetent has allowed them to explain the idea of eternity as an endless time. Just this led the scholastics to such utterances as, "*Æternitas non est temporis sine fine successio, sed Nunc stans*"; even Plato said in the Timæus, and Plotinus repeated, "*Αἰῶνος εἰκὼν κινητὴ ὁ χρόνος.*" According to this view, one might call time eternity drawn asunder, and found on this the assertion, that if there is no eternity, there also can be no time. Since Kant, in the same sense, there has entered into Philosophy the idea of a being which trascends time; but one should be very careful in the use of this, because it belongs to those which still might be thought, but by no intuition can be supported or realized.

It could easily be understood that time everywhere and in all heads runs on at the same rate, if the same were something purely external, objective, perceptible through the senses like bodies. But this it is not; we can neither touch nor see it. It also is by no means the mere motion or some other change of bodies: all this is rather in time, which therefore already is presupposed as a condition of it; for the clock goes too fast or too slow, and not the time with it; but the synchronistic and normal, to which this slow and fast is referred, is the real course of time. The clock measures time, but it does not make it. If all clocks stopped, if even the sun himself stopped, if all and every motion stopped,—the course of time would not be delayed for a moment, but it would proceed in its regular course, and pass now without being accompanied by change. Notwithstanding all this, time is not something perceptible, not something externally given and operating on us, therefore nothing really objective. Nothing then remains except what lies within us, and which is our own undisturbed advancing mental process, or, as Kant calls it, the form of the inner sense and of all our conception; consequently it forms the undermost scaffold of the stage of this objective world. This symmetry of its course in all heads proves, more than anything else, that we all are imbedded in the same dream, even that it is one being that dreams. (If one should wonder at this subjective origin of time, or even at the perfect sameness of its course in all heads, there would be some misunderstanding at the bottom; for the sameness here would mean, that in the same amount of time the same amount of time would pass; consequently the absurd presupposition of a second time would be made, in which the first, fast or slow, would pass.) The same can be proved in space, so far as I leave behind me all worlds; however many there may be, I still never can get out of space, but always bring this with me, because it adheres to my intellect and belongs to the perceiving machine in my skull.

Now time is that mechanism of our intellect by virtue of which what we take as the future now does not seem to exist at all; this illusion disappears as soon as the future has become present. In some dreams, in clairvoyant somnam-

bulism, and in second-sight, this illusion becomes put aside; therefore the future presents itself as being present. This explains why all trials which have been made to frustrate, sometimes, were it only in accessory circumstances, what had been foretold by the seer of second-sight, must fail; for he has seen it in the reality of it, being present already at that time—just as we only perceive that which is present;—it therefore possesses the same unalterableness as the past. (Examples of experiments of this kind are to be found in Kieser's Archives für thierischen Magnetismus, vol. 8.)

Corresponding to this, the necessity of everything that happens, i.e. enters successively in time, presenting itself to us by means of the chain of cause and effect, is only the way in which, under the form of time, we perceive the one and unchangeable existing; or, also, it is the impossibility that the existing, although we perceive it to-day as future, to-morrow as present, the day after to-morrow as past, should not be identicalwith itself, be one and unalterable. As in the conformity of the organism to its indwelling purpose the unity of the will objectivating itself in it presents itself, though in our apprehension limited by space, this is perceived as a multitude of parts and their correspondence to the end; in the same way, the necessity of everything that happens, brought on by the causal nexus, forms the unity of the being, objectivating itself in it, but which in our apprehension, limited by time, is conceived as a succession of conditions, that is, as something past, present, or future; while the being itself knows nothing of all that, but exists in the "*Nunc stans.*"

Separation in space is very much more easily annulled in the somnambulistic clairvoyance than separation in time, as the merely absent and distant are much oftener brought to perception than what is really still future. In the language of Kant, this could be explained from this, that space is only a form of the external, but time that of the internal sense. That space and time, according to their forms, are contemplated *à priori*, Kant has taught; but that this also can be done according to their content, is taught by the clairvoyant somnambulism.

§ 30. The clearest and at the same time most simple proof of the ideality of space is this, that we cannot annul space in our thinking, as we do all else: we can only empty it. Everything we can think away from space we can let disappear, we even can imagine the space between the fixed stars to be absolutely void, etc. Only space itself we never can get rid of in any way; whatever we do, wherever we may place ourselves, it is there, and has nowhere an end: for it lies at the foundation of all our thinking and is its first condition. By this is proved undeniably that it belongs to our intellect itself, forms an integral part of it, and indeed that part which furnishes the warp of the web upon which the variegated world of objects then is woven. For it presents itself as soon as there is imagined an object, and accompanies afterwards all movements, turns, and efforts, of the contemplating intellect just as constantly as the spectacles which I have on my nose accompany all turns and movements of my person, or as the shadow accompanies the body. If I remark that something, everywhere and under all conditions, is with me, then I conclude that it belongs to me; thus, for instance, if a certain odor, which I want to escape, presents itself wherever I go. The same is true with space: whatever I may think, whatever world I imagine, there always is first space, which never yields. Now if this is, as it plainly follows from this, a function—yea, even a fundamental function of my intellect itself—then the ideality following from this also extends itself over everything spatial, i.e. everything presenting itself in it, no matter whether this in itself have an objective existence; but in so far as it is spatial, so far as it has figure, size, and motion, it is subjectively conditioned. The exact and just calculations of astronomy are possible only through this, that space, properly speaking, is in our head. Consequently we do not recognize things as they are in themselves, but only as they appear. This is the great doctrine of the great Kant.

It is the most absurd, but in a certain sense the most fruitful of all thoughts, that space is independent of us, that it in itself is existing, and that a mere picture of it as of something infinite through our eyes should penetrate our head; because, whoever really perceives the absurdity of this, will

recognize immediately with this the mere apparent existence of this world, in conceiving it as a mere phenomenon of the brain, which, as such, will vanish with the death of the brain, and leave remaining quite a different world, the world of things in themselves. That the head is in space does not prevent one from conceiving that space after all is only in the head.*

ROBERT SCHUMANN.

By E. Sobolewski.

Schumann was a singular phenomenon both as a man and as an artist. All-absorbed in the world of tones, he would sit for hours in the company of friends without uttering a word. His whole life was a dream, often a very beautiful one.

Schumann made his first appearance in the musical world as Editor of "The New Musical Gazette" of Leipsic, the finest articles by his pen being signed "Florestan" or "Eusebius"; "Florestan" always floating in the seventh heaven, and "Eusebius" in a somewhat lower sphere.

The object of this "Gazette" was to propagate and promote the new Romantic School, in opposition to another "Gazette," advocating the Old School, and edited by Fink, in Leipsic. Schumann called this opposition the "Combat of David with the Philistines." For this reason artists and amateurs who contributed to his paper received the name of "Davids-Bundler."

In a composition by Schumann entitled "Davids-Bundler Dances," which is small in volume but great in spirit and originality, he painted the different characters of his friends the "Davids-Bundler."

Many of Schumann's compositions owe their creation to similar circumstances. Thus the grand Fantasy in C for the

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* If I say, "in another world," it shows a great want of sense to ask, "where is this other world?" For space, which only gives a meaning to all wheres, is just what belongs to this world: out of it there is no *where*. Peace, rest, and happiness, are only where there is no *where* and no *when*.

Piano, Op. 17, originated in the following manner:—It was resolved that a monument should be erected in memory of Beethoven; but how obtain the necessary means? The publishers of Beethoven's music could have solved the problem, as they had gathered riches by these publications, hardly paying Beethoven sufficient to make his living; but, calculating that the dead knew no necessities, they contributed nothing towards the monument.

The object was taken in hand by a few poor musicians and amateurs, and Schumann wrote this Fantasy for the occasion, intending to call it "Obolus," signifying the smallest silver coin of Athens, about two cents in value. He chose this title because he supposed, and but too correctly, that this composition, although worthy of Beethoven, would not be rated and paid for very highly by music publishers. It turned out even worse than he feared, for they refused to publish "Obolus" at all, not even as a gift!

Schumann then renounced the project and cast his "Obolus" aside. It was afterwards published by Breitkopf and Haertel under the title of "Fantasy." The performer of this and later compositions of Schumann will better understand the import and idea of these pieces by knowing their origin.

Schumann's Carnival Scenes, which Liszt executed with so much success at Vienna, owe their existence to the following circumstance:

These very interesting Genre-pictures, so full of life and spirit, of epigrammatic crooks and witty hooks, are all founded on the four notes—*a*, *e* flat, *c*, and *b*; constituting in the German language the four letters—*a*, *s*, *c*, and *h*,—Asch being the name of a small town in Saxony, the Residence of the Light of Schumann's soul! His heart was all love—it is expressed in every tone of his music. This love was not loud and passionate, not *à la Verdi*, nor in the least like the passion of Arditi's "Bacio." It was so silent, Platonic, and pure, that his bride, the celebrated Pianiste, Clara Wiek, afterwards his wife, was never jealous.

Many who performed these compositions did not discover that every one of the parts begins with these four notes, robed in entirely different fashions by time and rhythm.

Schumann's Fantasy pieces, already very celebrated, were brought to still greater notice by Miss Ladlaw, a young English lady and a very distinguished piano player, while at Leipsic. These pieces, dedicated to her, are very beautiful, and not as difficult to perform as the "Carnival," which was written expressly for Liszt.

Yet the finest of Schumann's small Compositions for the Piano are his "Children Scenes." By a half prophetic, half poetic intuition, and that spiritual flexibility which is particularly a quality of objective power, the Composer rendered in tones the temper, situations, and different moments of childhood to such a degree, that a sensitive soul in listening to them is touched to the inmost core of the heart. Critics often ask, "Whence comes this uncommon effect? what brings the hearer into such perfect illusion?" Nothing but the verity of the picture, the true representation and coloring of Nature, because the tone-poet was lost entirely in his object; in a word, because he found the *naïveté*, sweet carelessness of real childhood. This is the reason.

These compositions do not require much mechanical drill of the fingers, but a fine sensitive feeling and musical intelligence.

The amateur who desires to become familiar with Schumann should begin with his later compositions. The first productions of this artist are far more difficult in melodical and harmonical relation in spirit and form, and calculated more for players like Liszt and Thalberg than amateurs; for in the beginning of his musical career he expressed the deepest and most original thoughts of which he was master, and for this very reason often gave too much.

His whole power at that time, however, was not yet fully developed. He studied counterpoint, fugues, and canons, at a later period. Yet, with his eminent talent and intellectual power, he soon surpassed all his predecessors, excepting the old Italian masters and Händel and Bach.

Schumann was a master in every species of music. At his time there still existed Organists who condemned not only all Concert and Opera music, but all music in general which was not full of prolongations, suspensions, imitations, coun-

terpoint in all its intervals, and other such things belonging to the fugue style; yet even upon these Schumann imposed respect.

Once a friend of Schumann praised his compositions for the piano to one of these men, a young and talented artist—Granzian, organist at Dantzic, and composer of a very good "Crucifixus" in the style of Capella. Granzian glanced over Schumann's composition and said contemptuously, "Yes," pretty sweet and nice melodies, but not a bit of the right art in all those pieces; the smallest of Bach's preludes is worth more than the whole of Schumann!"

"But have you," replied the other, "looked minutely into their structure? Did you perceive that the smallest part of these compositions is based upon a very skilful canon?"

"Canon!" said Granzian, "let me see and play these wonders again."

He did; and a tear rolled from his eye, and in tears he spoke: "Your Schumann is a great master; the depth of Art in his works can scarcely be discerned!"

It was so, and always should be so. The study of Art must never be paraded in music. Counterpoint, fugue, and canons, are good servants, but should never rule as masters.

Euler, the celebrated Professor of Mathematics, composed, without the least knowledge of Music, by mere calculation, a very long vocal fugue. This fugue on paper looks very nice, but executed is horrible.

The celebrated philosopher Herbart also composed a sonata for piano and violin, wherein an adagio is in $\frac{5}{4}$ time, i.e. one accented part (the first) to four unaccented in the bar—difficult to perform and hard to enjoy. The apparent $\frac{5}{4}$ time sometimes found in Operas, as in Boieldieu's Dame Blanche, is in reality no $\frac{5}{4}$ time at all, but merely a combination of $\frac{3}{4}$ and $\frac{2}{4}$ time in one bar. Though mathematics is beyond question a very high science, yet it constitutes neither a principle nor a requirement for a composer of music. For this reason, but few, and often the best of them, have been little versed in this art, and often fell short in their reckonings in daily life—yea, being mostly in embarrassed circumstances, as Beethoven, Franz Schubert, and many others.

Schumann himself devoted and spent an inherited fortune for his art, and left his wife and children in no enviable circumstances when he died. He overlooked the necessities of this world in experiencing the wonders of the other, the world of tones, to which his soul belonged and where it sought its home: his greatest happiness was to soar to heaven and revel in the etherial paradise of the tone-world. For this reason his greatest success was achieved in compositions of a free, visionary nature; whenever his imagination was limited, his productions were not so perfect.

This we may notice in the overtures to Byron's Manfred and in Genovefa, operas composed by him. In this kind of music he reaches neither Mozart, Beethoven, nor Mendelssohn. Yet in his symphonies he excels the latter, not being confined to any definite limit, as is the case in the composition of overtures to operas or dramas.

The symphony, according to the old theorists, requires great and bold thought, free treatment of the harmony, strongly marked rhythms of different kinds, powerful bass melodies, free imitations, sometimes a theme treated as a fugue, sudden modulations, strong contrasts of forte and piano, crescendos,—which, by a melody rising in expression, are of great effect. For all this is needed talent and capability to combine all parts in such manner that the one does not destroy the other. Such a symphony is like an ode of Pindar; it elevates the soul to heaven, and needs the same inspiration, the same sublime imagination, and deep science of Art, as the works of this great poet.

Such compositions are Beethoven's and Schumann's symphonies: not so Mendelssohn's, whose symphonies are rather more like string-quartettes, with addition of brass and wind instruments, than compositions for instrumental masses. They are too fine and their character too sweet, and should never be placed on a programme for a great musical festival; excepting, however, the so-called Scottish symphony, wherein the original Scottish theme is well preserved.

Schumann's vocal compositions likewise embrace much grace. Some are a little broken, like Heine's poems; but many are very beautiful, as "Thou, my life! O thou, my

soul!" "Grudge me not"; "Mignon's Song," and many others. In compositions of this kind he approaches Beethoven and Schubert nearer than Mendelssohn ever did.

Schumann's greatest and best work in vocal music is "Paradise and Peri." Before he composed this upon the poem of Thomas Moore he intended to have chosen "The Prophet of Khorassan." Concerning the latter he wrote to me: "I have carried this dreadful fellow in my head for nine months, and now you step in and compose him as opera before me. So I must take 'Paradise and Peri,' for 'Lalla Rookh' is too beautiful, and has troubled my brain too much! I must pour out music for one or the other of these sublime Oriental poems!"

This composition is entirely new in its form. It is neither oratorio nor opera, yet approaching nearer to the latter. Its solos and choruses are of the most exquisite beauty. The instrumentation is magnificent—never too much for the singer, and never enough for the hearer. Every tone produced by an instrument appears to be a new star on the clear blue sky; even when the triangle sounds, though but a single tone, we look upon it as an important instrument, and consider its player an artist, whom before we thought but little superior to a bellows-treader.

Thus Genius understands how to transform a triangle-player into an artist, who needs but little more than one note to be master of his entire musical science; and thus it transforms every musician into an Apollo, and the soprano and alto singers into Muses, even as Napoleon I. transformed his whole Italian army into heroes.

RECOGNITION.

By John Albee.

Led by the thread which destiny unrolls,
  Before our eyes have seen or ears have heard,
We feel the presage of familiar souls
  And all our being is with longing stirred.

Partly I saw but more I felt her fair.
  Such brows of gleaming white! and gleamed as well
Her ear transparent half hid in her hair,
  As shines in seaweed a small rosy shell.

Was any hope or fear in her begun
  That raised her eyes and breathed through all her breast?
Ages ago her soul with mine was one,
  Nor even halved by a corporeal vest.

At last the hour was come in which I sought
  To cross her path, borne on by Fate's design;
But, held by all the power of subtle thought,
  I only told her eyes what shone through mine.

How soon with one quick thrilling glance she turned!
  How well she knew this late, this old embrace!
The spirit's legend in the strange light burned,
  And all the past was easy to retrace.

Our life's dark paths all lead one certain way;
  Love draws us on to all that is our own;
We think we miss so much—so oft we lay
  Our hearts in hands that leave us still alone.

So many things just hint the real thing.
  Too long I dallied with a phantom face
That only taught me how this soul to bring
  Nearer to thine and its appointed place.

HERBART'S RATIONAL PSYCHOLOGY.*

Translated by H. HAANEL.

FIRST SECTION.

Principles of Metaphysic and Philosophy of Nature.

FIRST CHAPTER.

Of Soul and Matter.

150. The hypothesis of a soul, upon which suspicion has been cast by modern systems without just reason, must be restored; not, however, without qualifications, formerly unknown. The soul is a simple substance; not only without parts, but without any and every multiplicity of qualities. Hence it is *spaceless;* although, by the action of thought, it necessarily is grouped with other beings located in space, and, for every moment of time, in a definite place, yet such place is what is perfectly simple in space, or nothing in space, a mathematical point.

NOTE.—There are certain necessary and logically consistent fictions, where, in behalf of doctrines of natural philosophy, and hence of physiology, though not of psychology, that which is simple is considered as if parts could be distinguished in the same. Such fictions must also be applied to the soul in reference to its union with the body, without thereby attributing properties, really belonging to space, to the soul itself. Somewhat similar are geometrical fictions, e.g. when curves are viewed as consisting of rectilinear parts.

151. The soul is, for the same reason, *timeless.* Although in the mind, by which it is comprehended in company with other substances, it must take its place in time, or rather in endless eternity, such eternity, after all, or any duration of time in general, does not furnish a predicate really inherent in the soul itself.

152. The soul has no innate ideas or faculties either to receive or to produce. It is, therefore, no *tabula rasa* in such a sense as if impressions could be made upon the same foreign to it; nor is it a substance, within the meaning of Leibnitz,

* J. F. Herbart's Complete Works, edited by G. Hartenstein. Vol. V., pp. 108–117.

endowed with unconditional spontaneity. In and of itself, it has neither perceptions, nor feelings, nor desires; it knows nothing of itself and nothing of other objects; it is in possession of no form of intuition or thought, of no laws of volition or action, and of no kind of predisposition to that effect however remote.

153. The quality of the soul, as absolutely simple, is completely unknown, and must remain so forever; it is no more an object of rational than it is of empirical psychology.

154. There is a relation between several simple and dissimilar substances which, with the help of an analogy from the material world, may be designated by the terms of pressure and resistance. For, as pressure is motion obstructed, said relation consists in this, that something would be altered in the simple quality of one substance by another, provided the first did not resist and preserve its quality against the perturbation. Self-preservations of this description are exclusively the one thing which is truly going on in Nature, and it is this which furnishes the connection between the changes we observe and the changeless substances.

155. The soul's self-preservations are (at least in part, and as far as we know) intuitions and simple intuitions, because the act of self-preservation is as simple as the substance which preserves itself. An infinite diversity of such acts is consistent therewith, for they are as diversified as are the perturbations. Accordingly, the variety of intuitions and their infinite combinations present no difficulty whatever. We are not speaking here of feelings and desires. These appear to be a compound of something objective, on one hand, and, on the other, of the act of preferring or rejecting; which will be explained hereafter. Nor are we already speaking of self-consciousness, or of anything that may be referred to the inner sense.

156. Opposition between soul and matter is not opposition of the quality of substances; it is opposition of our mode of viewing them. Matter, viewed as a substance of space, with forces of space such as we are in the habit of conceiving the same, belongs neither to the sphere of that which never changes, nor to that which always changes, but is a mere

phenomenon. Such matter exists solely as a *sum* of simple substances; and in each of these substances something is really enacted, the effect of which is the phenomenon of a (definite) existence in space.

Further explanation of matter consists entirely in showing how certain relations of space, as unavoidable modes of observation, correspond to the inner states of substances (self-preservations), and how those relations, not being substances, are necessarily governed by these states in such a manner that an appearance of attraction and repulsion is produced. The proportion of the two latter prescribes to matter its degree of density, its elasticity, its form of crystallization by free condensation; in a word, its essential properties, which, in this sense, are absolutely dependent upon the qualities of simple substances. Matter never fills space with absolute identity of all parts (this geometrical continuum cannot be construed of simple parts), but it fills the same with an incomplete and mutual interpenetration of its contiguous simple part. (Compare note under § 150 in regard to this contradiction.)

A given kind of matter is impenetrable for those substances only which are not capable of altering the proportion of attraction and repulsion existing in the same. It can be penetrated by all its solvents.

NOTE. — To account for the preceding and following propositions, the author must refer to his Metaphysic, with which his Philosophy of Nature is connected.

SECOND CHAPTER.

Of Vital Forces.

157. Vital forces (it is best to speak of them in the plural number, as they could not originate or operate otherwise) do not exist unconditionally, and there is nothing similar to them in the simple quality of substances. Only a system of self-preservations in one and the same substance is capable of producing them, and they are to be considered as the inner culture of simple substances. They usually take their origin in the elements of organic bodies, the arrangement of which is fit to call forth systems of self-preservations in the individual elements. This is exhibited by the assimilation of nutritious matter.

158. The peculiar vital force, once acquired, is retained by the element after separation from the organic body to which it belonged. This appears from the fact that higher organisms need those of a lower order, and that plants need the decomposed parts of other organic bodies for assimilation.

NOTE.—All generation must be referred to the same cause without exception, including that of lower organisms from matter apparently crude, i.e. from matter which does not possess an organic structure—a sign from which the absence of vital force cannot be inferred. To see in this fact, on the other hand, original vital force, is a hasty conclusion. Within the sphere of our experience, there occurs no matter which could be safely affirmed to be crude. The whole atmosphere is full of elements which have acquired vital force in some organic body previously, and the number of such elements increases in Nature incessantly. Indeed we do not know whether such matter is not exchanged between the astronomical bodies.

159. All human investigation necessarily terminates in referring the organic forces to Providence, to the designs of which they owe their origin. No metaphysic and no experience reaches beyond; but every hypothesis, according to which lower organisms have been developed from crude matter and higher organisms fron those of a lower order, may be refuted by argument.

160. Psychology exhibits a preëminent internal culture in the example of the soul. The internal culture of every other substance, though devoid of conscious acts, is to be understood in accordance with this type, and, in connection with the above remark, that, where several beings constitute a material whole, their internal state will always produce a corresponding external situation. For this reason vital forces usually appear as moving forces; but their motions cannot, for the same reason, be comprehended by chemical or mechanical laws. (Internal culture is set aside in considerations of the latter class.)

The relation between psychology and physiology is herewith indicated: Psychology is the first, the preceding science; the other, unless content with undigested experience, is the second; for it has to learn what is internal culture from the first. A true definition of life cannot be obtained without the help of psychology.

NOTE.—Treviranus' Biology (vol. 1, p. 16) may be compared, among others, with regard to the difficulty of defining life. The plainest empirical

sign is, probably, assimilation, and we mentioned it, therefore, first. If an organism should be found without this characteristic property, we might have reason to doubt whether it is living or not, though it should be possessed of a soul (a case which, in general, may be conceived to be possible).

161. In accordance with the above, it is a matter of course that vital forces may be very different with respect to properties as well as to degrees. For a system of self-preservations may be different in different substances; it may appear changed in like substances according to the different perturbations; finally, there may be a greater or less number of self-preservations corresponding to the perturbations.

This explains the variety of what is prepared from the same kind of nutriment. The elements of which heart and nerves consist are, chemically considered, certainly not as widely different as they are by internal culture.

The causal connection between different parts of the same living body, or between this body and the outside world, presents no general difficulty. All causality, and in particular all cohesion of matter, depends upon the dissimilarity of elements. Consequently, the influence e.g. of nerves upon muscles cannot excite special surprise; nor is there any need of hypotheses of electrical streams, polar forces, and the like empty fancies which owe their existence to the most modern idiosyncrasies of physicists. There might be something true in them, and yet the most important points of the problem remain unanswered; and one puzzle is, after all, replaced by another.

THIRD CHAPTER.

Of the Connection between Soul and Body.

162. The connection between mind and matter in animals, and particularly in man, contains much that must be referred to the wisdom of Providence; but the miracle is not where we are in the habit of seeking the same, because we, on the one hand, suppose matter, as extended in space, to be a real substance, and because, on the other hand, we consider the human mind to be an innate thinking, feeling, and volition: so that every term of comparison is missing. Let us seek behind matter, as a phenomenon of space, the simple substances capable of internal culture and of which the pheno-

menon is composed; let us consider the mind as a soul with conscious actions (self-preservations); let us remember that self-preservations in other substances (directly in the elements of the nervous system) must correspond to the intuitions or conscious self-preservations of the soul,—and we shall understand that the chain of correlated self-preservations may stretch beyond even through an entire system of substances which present themselves as one body, and we shall not any longer find it enigmatical if a series of internal changes reaches forward and backward from the end of the toe to the brain and into the soul, without succession in time and without motion in space, though both may occur as accompanying phenomena.

163. But now a question reappears which has hitherto been unjustly neglected, the question concerning the seat of the soul. It is known that, on physiological grounds, not a place, but a region (between brain and spinal cord), may be assigned to it with probability. Nor is there any need for a fixed seat, for the soul may move in a certain region without finding the least intimation of the fact in consciousness, and without leaving the least trace of it to be apprehended by anatomical researches; moreover, this change of seat might afford a very fruitful hypothesis for the explanation of anomalous facts.

NOTE I.—This passage has created much astonishment. Let physiologists remember that their sphere of observation is confined to the limits of space, and they may leave it to the metaphysician to take care that no more is yielded to space than rightfully belongs to it. But, if they desire to share these cares, let them study metaphysics.

NOTE II.—There is no good reason for assuming the seat of the soul to be precisely in the same place in animals and man. It is probably in the spinal cord of animals, especially of the lower order. Nor is this all. It is not to be supposed that every animal has only one soul. The contrary is probable with regard to worms, parts of which continue life when cut off. There may be a great number of elements in the nervous system of the human body, the internal culture of which far exceeds that of the souls of animals of lower degree. (Besides, it should be borne in mind that signs of life are not yet signs of a soul. Life continues for a time without a soul in parts separated from their organism.) If disposed to attribute several souls to one human body, we should guard against distributing the mental faculties among them; on the contrary, they should be entire in every one; next, the most perfect harmony is to be presupposed among them, and to

such extent that they would appear exactly identical copies of the same original; but this is improbable in the highest degree, and the whole suggestion, on that account, entirely objectionable. If, in the conflict between reason and passion, it sometimes would appear to man as if he was possessed of several souls, he will find it to be a psychical phenomenon, the explanation of which will occur below, and which should not be confounded with the paradoxical opinion just mentioned.

164. The entire nervous system of the human body is, therefore, servant to a single soul; by means of that it is planted into this body, more a burden to the same than a help; for, if nourishment and a convenient place is provided, as is done in the case of complete idiots, it may vegetate like a plant. (Some stories of born idiots suggest the idea that these, possibly, were only vegetating bodies, without souls.)

165. The causal connection between all parts of the entire system, called man, being so close, it cannot appear strange that the mind is dependent upon the body in many ways. But it is certainly surprising that the nervous system, upon the whole, seems to have been created for the office of a servant, and we recognize this fact the better the more we see how few physiological suppositions are required to explain mental states and actions. It is, however, only in health that the nervous system serves; the same appears disobedient and self-willed in sickness; and in mental diseases, especially in fools, the relation between soul and nerves is completely reversed. This may serve as a hint not to consider the state of health as a mere phenomenon of Nature which could not well be different, but to behold in it with reverence a beneficent arrangement of Providence.

166. It would hardly be necessary to make mention of the communication with the outside world afforded to the soul by the body and limited by it, if I did not feel obliged to remark, that the popular opinion of a general organic connection of the entire universe should not be associated with the propositions here advanced, unless there is a desire to contaminate conceptions perfectly heterogeneous by each other.

NOTE.—There are no satisfactory reasons *a priori* for a universal causal connection, and experience ends with the faint glimmer of light exchanged by distant suns.

REVISAL OF KANT'S CATEGORIES.

By Stephen Pearl Andrews.

The categories of quantity, quality, relation, and modality, as developed by Immanuel Kant in his Critique on Pure Reason, lie so directly at the basis of the entire fabric of modern speculative philosophy, that any work done, either to render the application of these fundamental discriminations of thought more extensive and lucid, or to remove any lurking error in the classification itself, could not be otherwise than important. I propose in this communication to attempt both of these objects.

In respect to the first, the better understanding of the categories themselves, and especially outside of or beyond the abstract metaphysical aspect of the subject, the carrying of them over from being merely categories of the understanding into some objective sphere, and proving them in that manner to be also categories of Universal Being, what I shall attempt is only what is greatly needed in respect to the whole domain of abstract and transcendental thinking. It is alike characteristic of the transcendental Metaphysicians and of the modern Positivists, or the school of external Scientists, that they have kept mutually so well asunder from each other. If the former have carried their abstract truths into the realm of objective science at all, it has been feebly, and only, as it were, for the purpose of illustration or defence; and, if the Positivist School of investigators have drawn upon the Metaphysicians, as, in fact, they often have, and largely, for the better statement of the laws which they are formulating in the realm of Nature, and indeed for the discovery of the laws themselves, it has been for the most part without credit and often quite unconsciously. It will be the work of the thinkers of the future to narrow and to span this gulf which severs Philosophy from Science, and to demonstrate the identity of law in both spheres. The abstractions of transcendental logic must be carried forward and outward into the domain of Nature on the one hand; and the observations, investigations and reasonings of the objective scientists must and will more consciously, and in

the end gladly, come into subordination to the governing influence of metaphysical, logical and transcendental thinking.

At the moment, I have in view, however, nothing more than to point out with, as I hope, some accuracy, the actual expression, correspondentially, of the Kantian categories in the domain of ordinary school grammar—language, of which grammar is the mere presentative science, being, as it were, the middle ground between the metaphysical and the physical domain; so that what is here accomplished in respect to language, may, by an ulterior application of the same analogy, be carried forward into the outer world.

The three categories* of quantity are Unity, Manifoldness, and Universality, which are no more than the same ideas which in respect to grammar we indicate by the terms "singular," "plural," and "common." These discriminations are made to apply, in the first instance, to nouns and pronouns, which are the entical parts of speech; but they are carried over thence into a formal relation with the verb, and are again expressed, at least as to the singular and plural, in the forms of the verb as they occur in Sanscrit, Latin, Greek, and the other more complex languages; and, in some slight measure, in all languages which can be said to have any grammatical development.

The verb, when analyzed and stripped of its connection with participial forms, is reducible entirely to the single verb *to be*, predicating existence, or serving as copula (of being or existence), expressing itself in the coupling of the substantive with the attributive idea. "I love," "I read," "I speak," signify merely, as is familiarly known, "I am loving, "I am reading," "I am speaking"; so that the true verbal part of every such expression resolves itself into the idea of being; whence it is that the verb, as the core of grammar, is, at the

* The categories, as in Seelye's translation of Schwegler's History of Philosophy, are as follows:

Quantity.	Quality.
Totality,	Reality.
Multiplicity,	Negation.
Unity,	Limitation.
Relation.	**Modality.**
Substance and Inherence,	Possibility and Impossibility.
Cause and Dependence,	Being and Not-Being.
Reciprocal Action,	Necessity and Accidence.

same time, the core of logic; and its subject-matter is being itself, separating into the "Seyn" and "Nicht-seyn" of Hegel, or into the Reality (otherwise, and better, termed Affirmation) and the Negation of Kant's categories of quality.

We are thus conducted to this second considerable group of the categories. The affirmative locution, as "I love," the negative locution, as "I do not love," and the interrogative locution with its double form, affirmative and negative, "do I love?" and "do I not love?" are the first distinctive and most important modifications of the verb, prior even to considerations of tense and mode, and so obvious, direct, and simple, that grammarians have overlooked them, and have not provided any technicality for the expression of these peculiarities. So far as affirmation and negation are concerned, it is quite obvious that we are here again in exact accord with the Kantian discrimination in question. It is not quite so obvious, but equally true, that the interrogative locution involves what Kant intends abstractly by the term "limitation." Spencer says rightly, "All distinction is limitation." To discriminate in thought, as in any affirmation or negation from its opposite, is to insert mental limitation between them. Interrogation implies doubt, and dubitation is the discrimination and the holding in the balance before the mind of opposite propositions. "Do I love?" stands always in correlation with the opposite form, "do I not love?" The mind balances or wavers along the line of difference between the two ideas; and, in this manner, interrogation implies and corresponds with "limitation" as exactly as "Reality" with negation and "Affirmation" with negation.

We pass, in the next place, to the categories of relation. These forms are double. The first, which is inherence and substance (*substantia et accidens*, or, better here, *accidens et substantia*), is denoted in grammar by the adjective and the substantive in their mutual relation, the former as accessory to the latter. It needs only to be observed that the idea of adjectivity must, however, be so extended as to include the accidents, or case-relations, of the noun-substantive; that is to say, substantives in all other cases than in the nominative or vocative, which oblique cases are then denominated, in the technicalities of grammar, accidents, and are as really adjec-

tives as the words to which the name is usually restricted. It should be further observed that this relation is static, or occurs in space merely, and, as such, it has a relation to the modes of the verb, as will be pointed out subsequently.

The next of these categories is that of causality and dependence (of cause or agency, and operation or effect). This has a similar relation to the tense of the verb, which appears best when the verb is in the active voice. The "causality," cause, or agency, is then represented by the nominative which names the agent, and the "dependence" by the verb which names the operation. The relation here is what I denominate motic, and thence it has the same relation to time, and so to tense, as that which the preceding static relation holds to space, and thence to the mode of the verb. The relation of the tenses of the verb to time is universally recognized. That of the static relation of substance and accidents to modes of the verb is more obscure, but will be brought into some lucidity by the following considerations. The oblique cases of the noun, really, as we have seen, adjective in character, pass readily, by contraction and condensation, into the class of words called adverbs. "Rarely" means, for example, "at rare times"; "often," at "frequent times," &c. All adverbs may, in this manner, be reduced to oblique cases of nouns; and yet it is the function of adverbs not now to qualify substantives as static objects in space, but to qualify verbs as motic processes in time; and so preeminently it is the office of the adverb to modulate or modify the meaning of the verb — a function, therefore, the same in kind as that which, in the more general way, and with regard to certain modes that can be so indicated, is fulfilled by the so-called mode or mood of the verb itself. *Mode is merely adverbiality wrought into the form of the verb.* It is seen, therefore, that the verb—now meaning the compound verb, including the participle—denotes "the becoming" (Werden), and that the mode of the verb is the transfer to this motic aspect of being of the first double category of relation which belongs primarily to mere substantive and static form of being (Seyn).

The third and final one of this group of categories is reciprocal action (the interworking between objectivity and pas-

sivity). In this there is clearly nothing else than what we denominate the voice of the verb and its changing form from the active to the passive voice, with its double or reflected form in the middle or reflected voice, and its quiet subsidence into indifference in the so-called neuter verb.

We come now, in time, to the categories of modality, in which we are simply to take up, *ex professo*, the consideration of that which has been previously alluded to, and partially provided for, as the modes or moods of the verb. The etymological identity of the names here, and throughout this exposition, is so striking and convincing that I have hardly deemed it necessary to advert to the subject, and nowhere more striking and convincing than in the case now before us. These are also double categories; and it is in respect to this group that I have the twofold undertaking in hand, first, to point out the grammatical analogies, and, in the second place, to establish certain important inaccuracies in the exposition of this class of discriminations as made by Kant himself; and I shall now couple these subjects with each other, The first of these categories is named by Kant that of possibility and impossibility. It will be seen, on slight reflection, that what is here meant is no more than bringing forward, in a new and special point of view, the same dubitation, now appearing as the potential mode of the verb which was previously expressed under the name of "limitation" and which appeared as the interrogative locution of the indicative mode. "I do not know *whether I shall go or not*," the last clause falling into what is denominated sometimes potential and sometimes subjunctive modality, is very closely related to the interrogatives, "shall I go?" or "shall I not go?" This intimate relationship is curiously and strikingly indicated in the Latin language by the force of the conjunction "an," which serves equally to introduce an interrogatory, or a clause involving this subjunctive dubitation.

But what is here said by Kant is by no means what is intended, or should be intended, by him. "Impossibility" is very far from being the true dubitative *antithet* of the term "possibility"; for nothing can be more certain *not to happen* than that which is impossible. What is meant, or should be meant, is not "what *cannot* be," but simply "what *may* not

be"; or "may happen not to come to pass." The compound relation is not between "may be" and "may not be" in the sense of "must not be," but that between "may be" and "may happen not to be." The antithesis is expressed in the phrase "whether is" or "is not," or by the phrase "may be" and "may be not"; and not by the phrase "may be" and "may not be," meaning "must not be," as when in peremptorily forbidding an act one says "that thing may not be," which last is the form that involves the idea of impossibility; and this notion of impossibility belongs not under this category at all, but, as we shall see presently, under the subsequent and final one relating to necessity.

The second of this series of categories is that of "being or existence" (the Hegelian difference between *Seyn* and *Daseyn* had not yet been insisted on) and "not-being or non-existence." Here again we have simply brought, in the performance of a new rôle, a category with which we are familiar under the name of reality, or affirmation and negation, and so close is the identity that there seems to be no other reason for the repetition than that affirmative and negative modality affect subjunctive and potential forms of thought in this case; whereas, under the categories of quality, it is the direct or indicative assertion or denial which is in question.

We come in the end to the third of this series of categories, which is stated by Kant as necessity and accidentality. But attention is now to be directed to the important fact that this also is a false antithesis. The real accidentality, as affecting the verb, is expressed in the affirmative and negative alternation. A thing may be or may not be, and occurrence or non-occurrence may be attributed to chance; whereas whatsoever is necessary is excluded from all connection with chance or accidentality. The true antithesis here, that which is meant, or should be meant, by this double category is "affirmative necessity" and "negative necessity"—the necessity to be or the necessity not to be (or *to not be*), one of which is just as peremptory as the other. The antithesis placed before us by Kant is really between the third and the second of this series of categories, and is not that which is intended. And now it will appear, on closer attention, that

negative necessity is exactly that impossibility which Kant has erroneously placed as the antithet of possibility. The true expression of the category here, therefore, is "*affirmative* necessity," called rightly by Kant "necessity," and "*negative* necessity" synonymous with *impossibility*.

The three categories of modality, as amended in accordance with these suggestions, will therefore stand thus:

1. Possibility and possibility not (to be).
2. Affirmative form and negative form of possibility and possibility not.
3. Affirmative necessity (command, imperative mode) and negative necessity = impossibility (inhibition, prohibition, negative form of the imperative mode).

Or, expressed verbally in the forms of the verb—1. "May be" and "may be not." 2. "May be" and "may not be"; or hypothetically "is" and "is not." 3. "Must be," "let it be," "be"; and "must not be," "let it not be," "be not."

But affirmative and negative necessity are not confined to the imperative mode, or to the modal form of the verb. They glide in, in a very subtle manner, in connection with alternative locutions in a way which is now to be pointed out. Positive necessity lurks in the compound alternative proposition, "*either* IS, *or is* NOT"; that is to say, it is an affirmative necessity by excluded middle that one or the other be true. This predication may be made with positive certainty of everything, either that "it is" or "is not." The *alternative involved* is therefore *affirmative necessity*, and we are, *as it were*, *commanded* to bide by the one or the other proposition. On the contrary, *negative necessity* is involved in the similar logical inhibition, or negative command, not to affirm that a thing "is *and* is not" (meaning to be understood in the same time and the same sense), for this involves the logical principle of contradiction. Either "is" or "is not" as an unavoidable alternative is therefore an expression of *affirmative necessity;* and "not (i.e. don't say) is" and "is not" is a similar expression of *negative necessity*.

These considerations lead us to another important observation in close connection with logical accuracy and true definition, not so directly, however, involved in the subject of

Kant's categories. I refer to a prevalent, if not indeed, as I believe, a universal inaccuracy in the use of the terms "positive" and "negative." Nothing is perhaps better established in the common idea, even with those most versed in critical discriminations, than that these two terms, positive and negative, are legitimately antithetical to each other, while yet this is not the case. The term truly antithetical to "negation" or "negative" is "affirmation" or "affirmative." "Affirmative" and "negative" make therefore the true coupling of terms in this sense. The true antithet of "positive" is, on the contrary, "dubitative" or "doubtful." A negative proposition is just as positive as an affirmative one. We deny as positively as we affirm; and that which is unpositive or nonpositive is simply undecided or doubtful.

There remains much to be said, in this connection, of the relation of the objective case to Objectivity, of the dative case to Teleology, etc. But, to avoid making this communication too long, I omit these additional considerations—saying merely, in general terms, that Grammar repeats Logic throughout in a sense which has not heretofore been clearly expounded, or, so far as I am aware of, even intimated.

NOTES AND DISCUSSIONS.

As a continuation of the discussion of Trendelenburg's critique of Hegel, Professor Vera of the University of Naples sends us the *Avant-propos de la deuxième édition* of his French translation of Hegel's Logic now printing in Paris. The following extract he thinks will clear up some points controverted by Professor Morris in our January number.

Criticism on Trendelenburg.

Translated from the French of A. VERA, by ANNA C. BRACKETT.

I will speak here of Trendelenburg's *Logical Investigations;* and I speak only of *his* work, because the other works on this subject—such, for example, as that of J. S. Mill—seem to me to possess no serious or scientific importance.* I have already examined this work of Trendelenburg

* What is Mr. Mill's Logic? Is it formal Logic, or is it rather objective Logic? What name shall be given to it? Is it deserving of the name of Logic? I maintain

in the Preface to the second edition of my *Introduction to the Philosophy of Hegel* [p. 26 of vol. vii. J. S. Ph.], where I think that I have demonstrated that it is—I will not say an imitation and a reproduction, but a falsification of Hegel's Logic. I propose here to complete this demonstration.

Those who are not strangers to the works of German philosophy well know that Trendelenburg, after having adopted the meaning and the objective and absolute form of the Logic of Hegel, took the liberty of substituting for the first Hegelian triad (I mean the first in the order of abstraction), i.e. *Being*, *Non-Being*, and *Becoming*, another triad, *Being*, *Thought*, and *Movement*. In examining this triad, the first question which naturally arises in our minds is this: "What has become of Non-Being in this dialectic, and how have Thought and Movement and then all the rest arisen without Non-Being? For it is plain that, in order to make any progress, Non-Being is quite as necessary as Being, and indeed even more necessary. But the reader can take courage. Non-Being is not lost, and it will appear at the proper time and place. However, it will not appear by the front door, but by a side door and in a kind of disguise.

After having, in the first part of his *Investigations*, given a certain number of categories, Trendelenburg seems to have discovered that all these categories could not have been developed without the intervention of a certain other category. And what is this? Listen to our author:—"We have shown," he says,† "in what precedes, the fundamental active notions (categories).‡ But with these categories there was implicitly (*stillschweigend*) bound up another category which we ought to consider as co-operative (*in dieser Mitwirkung*). This category is Negation (*Verneinung*)."

Thus Negation is placed here as an auxiliary of other categories. And what has it done? It has been active, but only implicitly. Are we in the sphere of Logic or in imaginary spaces? We must say that this implicit or silent work of the category under consideration is not its work, but a work which exists alone in the imagination of the author. For behold how, in the author's imagination, the work would be done. "While," he says, "Movement was producing definite formations (*Gebilde*), at first figures (*Figuren*) and numbers, there appeared in this work (*in dieser That*) a negative moment. There can be no figure unless there is a point of rest (*Hemmung*) in the generating movement. The unities of different numbers are posited as distinguishing them from each other. Each of them is

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that the only reply possible to these questions is that it is a confused, undigested, and superficial collection from all the spheres of knowledge; which is only saying that it is the exact opposite of Logic, and the exact opposite of what it should be.

† *Negation.* — The chapter entitled "Negation" is placed in the two great classes of categories designated by Trendelenburg by the names *Real* and *Modal*, and he gives us in these categories only the following remark as to the notion of *Negation*: — "We have already spoken of the fundamental active categories. With these categories there was implicitly bound up a notion which we ought to consider. This notion is *Negation*." Truly this is a very unceremonious way of disposing of it. But such bravado we know is often put on to conceal desperate situations.

‡ They are logically active in the sense that, according to our author, they are developed from the category of Movement.

the work of an activity which at the same time collects and separates them (*einer zusammenfassenden und zugleich ausschliessenden Thätigkeit*). When determinate results come forth from general movement, and when categories spring from this action and from these results, determination appears as a limitation and limitation as a negation. Each determination in itself implies the negation of that which is not itself. Thus negation acts like an element of the thing; not like an original (*ursprüngliches*) element, but like a consequence; not as an end, but as a means; it acts in a positive term, but not as an independent element (*ein selbstandiges für sich*)."

Thus speaks Trendelenburg; and we reply that the more he says, the more he condemns his own theory. To begin with: Could there be anything more strange than for one to say to us, "Behold a category without which nothing would have resulted from Movement, but which, although Movement by its aid brought forth other categories, such as Number and its unities, kept itself aloof and worked only in secret"? We ask again whether there was ever made a stranger statement than this. It requires no great effort to see that into the development of the categories this category directly enters; that it works in quite as plain and active a manner as Movement itself, and asserts itself quite as loudly, nay, even more loudly, since without it we should have only an indeterminate Movement, even if we had any Movement at all. But why does Trendelenburg introduce this category here in so arbitrary and singular a manner, and why, at the same time that he assures us that it appears here, is he nevertheless obliged to make it interpose in advance, although he makes it interpose in dumb show? It is because this category is neither more nor less than *Non-Being*.

But notice the skill of the author: We know that Trendelenburg does not wish to have any Non-Being. He desires neither the name nor the thing. And it is precisely for this reason that he calls by the name of Negation what in reality is nothing else than Non-Being. But why will he not have Non-Being? Because if he had admitted Non-Being he would have been obliged to place it side by side with Being, and thus all the scaffolding for his logic would have been demolished. But since truth is stronger than skill, he has been obliged to have recourse to the negative element—to an element which in its highest abstraction is exactly Non-Being. Trendelenburg then brings in Non-Being; but instead of calling it Non-Being he calls it Negation; instead of putting it in its proper place as the opposite of Being, he makes it enter—one cannot imagine why—at the end of a series of categories which presuppose it, and which could have had no existence without its co-operation. After this, of what consequence is the silent and passive work which Trendelenburg attributes to Negation, and which should commence in the train of Movement, for the reason, he says, that Movement must have certain points of rest in order that it may be determined? To begin with, it is not correct to say that Negation comes in in the train of Movement either silently or loudly. Movement itself is Movement only because it is neither Being nor Thought (the other two terms of Trendelenburg's triad), and this means that Movement presupposes Non-Being. And not alone Movement, but Thought itself, presupposes Non-Being, in that it is Thought only because it is that which Being is not.

And now how can any one say that this Non-Being, without which neither Movement nor Thought would have any existence, and by whose aid they are determined, is a passive element, and that it is not an original element? Doubtlessly Non-Being is a passive and derived element, in comparison with higher determinations like Matter, just as Matter is passive in comparison with the more concrete spheres of Nature. This is an elementary point. But Non-Being—or, if it must be so called, Negation—is not passive and derived in the sense in which the followers of Trendelenburg must understand it, i.e. in the sense that Non-Being is less active, less essential, and less original, than Being. Being and Non-Being are equally active and equally passive. They are equally passive in that abstract and indeterminate Being; or Being-in-itself is worth no more than Non-Being; equally abstract and indeterminate as Non-Being by itself. They are equally active in that they both enter on equal terms into the constitution and development of more concrete terms, such as Movement or Thought. Movement is not Movement through Being and because it contains Being, but also through Non-Being and because Non-Being negates Being, and in negating Being makes Movement possible. In other words, Movement *is*, and is Movement quite as much because of Non-Being as because of Being, and because it contains them both, and, in containing them both, constitutes their unity.

Thus this passivity and this silent and subordinate work of Negation are not reasonable. They have no more reason and are no more founded on reason than Negation itself as Trendelenburg conceives it, or than that triad which he substitutes for the Hegelian triad, and on which he tries to rear the scaffolding of his Logic.

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*Immortality.**

Mr. Editor:

The speculative interest which attaches to the discussion of the purely rational grounds of a belief in immortality is not, it seems to me, shared in any great degree by the practical interests of life; for, apart from the fact that immortality has been brought to light by other than speculative ways for the satisfaction of men's ethical and emotional needs, that sort of immortality, be it said with respect, which the transcendentalist makes probable, is not of a nature to work powerfully upon the imagination either for good or bad. This consideration emboldens me to offer a few strictures upon the reasoning and presuppositions of Mr. Kroeger, and upon your own remarks, Mr. Editor, in the last number* of the Journal.

The "practical proof" which Mr. Kroeger adduces, and which seems to be a very peculiar modification of the Kantian doctrine, amounts apparently to this:—First, that the moral impulse or conscience could not exist unless it were an absolute imperative. Now all impulses considered in themselves are unconditioned, pure impulse, and in that sense absolute; but if it is meant, as seems, that the moral impulse differs in demanding all or nothing, the proof is called for, as we are certainly conscious of degrees of moral inclination: second, "that no individual can attain this complete and abso-

* A continuation of the discussion in the July number of last year.—*Ed.*

lute subjection except at the completion of an infinite time"; which certainly means that no individual ever can.

As a conclusion from these astonishing premises, we learn that we can not act morally at all unless we "postulate" for ourselves an infinite continuance of our individual lives! It might be hard to show how the postulate helps so hard a case, especially so impractical a postulate as that about what shall happen at the end of an endless time. Mr. Kroeger, it seems to to me, instead of proving our immortality, has, if anything, proven our immortal immorality.

But the conscience does not make conditions—if it did it were no conscience—but simply acts in different individuals with different energy against the non-moral forces when they exceed their bounds.

As to the disturbance in the moral world consequent upon his or any one's removal from it, how can he think it would be greater than that consequent upon his advent? The physical universe would be as likely to blow up on the accession of a pebble to its matter as to collapse if one were removed; but it does not seem to me that anything can be added to or taken from the moral world, which is not the world of time, but of absolute relations.

I agree with you, Mr. Editor, as to the inadequacy as a first principle of every negative unity however obtained; I also concur in the definition of Individual by which you describe it as involving its own negative unity—that is, I conceive—as a self-related process. The individual therefore is immortal because self-determined, but then the *demonstrandum* comes to be that there exists a number of such entities. In your own words, "in the act of self-consciousness one realizes his identity wit pure universality or Ego in general," and all particulars are annulled y which we are distinguished as Tom, Dick, and Harry; so that it is a surreptition of the point in issue to say that Tom or Dick is conscious of *himself*, meaning to imply a discrimination of persons in the supreme reflective act. Empirically we are conscious of ourselves and much besides, but the speculative self-consciousness is not a determination of Tom, Dick, and Harry.

All unconscious individuals, you say, are transparent determinations of the absolute, and annulled as easily as determined, but conscious *individuals* have their own negative unity within them and alone remove their own limitations, &c. Again, I ask for the legitimation of the plural. Is it given in self-consciousness? It seems not. Is it reached by the dialectic? This seems to be the bearing of the theory of cognition by recognition and the doctrine of monads which you adduce here as illustrating the nature of the individual. But the monad remains an hypothesis; no legitimate dialectic can compass it; for there is no logical transition from a moment of comprehension to a self-developing monad, the only dialectical movement being by synthesis back to the negative unity of the comprehension. The monad is not logical, Leibnitz himself ascribing it to arbitrary creation and subjecting it to the possibilities of an equally super-rational destruction, while speaking of it as an effulguration of the Deity for lack of a deductive conception. Monadology differs from subjective Monism only by an hypothesis. Again, the self-realization of the Absolute cannot be inadequate, as

you seem to say, because there is not virtually another or many other Absolutes in which to mirror itself; but, if speculative thought has any truth, the Absolute realizes itself *by annulling its particular determinations*, and the realization of this in our own consciousness is the moral task of life. Again, the stand-point of the Idea differs, it seems to me, from that of the Comprehension [*Begriff*] in embracing, not the negative unity of moments in either position of the absolute reason, but their vital unity in the three positions of the reason—its thesis, externality, and return to self. All that you declare of the individual's sovereignty of the conditions of time and space—that is, of law—is true, but not of the particular.

We are free only in our conscious identity with the Absolute—that is, free to do what is perfectly reasonable and good. There is no other freedom than that of reason, as Spinoza has shown; and I think, too, that I speak *ex sententia magistri* when I say that the only immortality he accorded the particular individual is that which inheres in all *res singulares sub specie æternitatis conceptæ*.

B. C. SMITH.

University of Kansas, Lawrence, Kan., August, 1873.

Freedom of the Will.

From Kirksville, Missouri, where one of the State Normal Schools is located, and where some of the most vigorous thinking on Educational Psychology is done, Mr. O. P. D. writes regarding the Freedom of the Will: "I so frequently hear men, who pretend to be philosophers, speak of a '*part of the cause*,' when really I could gain no idea of what they intended to convey. Again, frequently it is said (with reference to willing) that were there no motive there would be no volition; whence they conclude that the *motive is at least a part of the cause of willing or volition*."

The constraint of the will through motives is frequently urged by people who are caught in the meshes of fatalistic thinking. And all thinking is fatalistic so long as it thinks only in the form of determination through others and cannot think under the form of self-determination. The reduction of the illusion of motive-constraint may perhaps be accomplished best as follows:

(*a*) A motive is an idea in the mind—it is a possibility seen as desirable.

(*b*) As such, it must be formed by the activity of thought; thought must be its cause. It must be formed by the process of abstraction; for unless one abstracts from things as they *are*, he cannot form an idea of things as he would desire to have them.

(*c*) An abstraction (i.e. a motive) from what is really existent cannot constrain or control an existent (i.e. the will, for example); for that would be to say that a somewhat (a motive or abstraction—something which is *desired* to be) can act before it exists, or that a possibility can cause a reality to change.

(*d*) The causal relation of this is as follows: The Ego as thinking activity causes or originates a motive. Now if the motive *could* be said to cause or originate a volition, the volition would in fact be caused by the thinking activity through the motive as agent, and not by the motive as an independent entity.

Briefly stated: a motive has its being in the totality which thinks it, and does not possess reality until the mind gives it to it by realizing it through volition. The motive arises through the thinking, which abstracts from some reality its potentiality and thus makes a motive. If the motive becomes actualized it ceases to be a motive. To say that a motive constrains the will, is to hold that a non-existent constrains an existent. But to say that the motivè constrains the will, and to acknowledge that the motive is caused by the mind, is to make the mind in volition *causa sui* in very deed. For mind initiates the act, which reflects back upon itself though the motive. Unless the archetype of the act exists for consciousness in the form of motive, the act, though spontaneous, is not *for* the Ego, and may be called involuntary, like the action of the heart. lungs, &c.

At the outset one must settle whether all things are externally constrained or determined. Finding that self-determination is the highest fact, he then can approach the subject of the Will. He must next investigate the ideas of Efficient and Final Causes. A confusion of these two species of causes prevents a solution. Efficient cause is the first principle of fatalism, Final cause is the first principle of freedom.

The excellent reflections on this topic in "Hazard on the Will" (published by the Appletons) are to be recommended to those interested. (See Book Notices in this Journal, vol. iv. p. 95.) EDITOR.

We have received the following communication regarding Professor Vera's recent review of Strauss's book, noticed in our last number:

M. le rédacteur du J. S. P.—Ce qu'un grand homme a affirmé à l'égard des langues est encore plus vrai à l'égard des philosophies ; celui qui n'en connait qu'une n'en connait aucune. C'est le cas du professeur Véra, qui, regardant, pour des raisons suffisantes, sans doute, la philosophie hégélienne comme la seule vraie philosophie,* et, par conséquent, la religion chrétienne comme la religion absolue,† vient d'entreprendre la réfutation ou plutôt la démolition de l'ouvrage récent du docteur Strauss, *L'ancienne et la nouvelle Foi.*‡

Quoi que l'on pense des principes ou des résultats philosophiques du docteur Strauss, personne ne s'avisera probablement de nier que ce ne soit un écrivain excellent, un logicien profond, un érudit des premiers, et comme il n'est pas tenu d'accepter les principes de Hégel, l'attaque de M. Véra ne

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* Si la vérité est une vérité determinée, la philosophie aussi doit être une philosophie determinée, et, s'il n'y a qu'une vérité, il n'y a ni ne peut y avoir qu'une philosophie. Et cette philosophie, je ne me lasserai pas de le répéter, et, autant qu'il est en moi, de le démontrer, est la philosophie hégélienne. (P. 2.)

† Nous prétendons que la religion chrétienne est la religion absolue en tant que religion, et cela parceque, d'une part, c'est l'unité de toutes les religions, et que, d'autre part, son principe est celui qui se rapproche le plus de la philosophie, de telle façon que la christianisme est virtuellement la philosophie. (P. 73.)

‡ STRAUSS, *L'Ancienne et la Nouvelle Foi.* Par A. Véra, Professeur de la Philosophie à l'Université de Naples. Naples: Detken et Rocholl, Place du Plébiscite, 1873.

saurait être que très-faible, ce qu'elle est en effet. Bien que nous ne soyons pas de ceux qui refusent à la religion toute validité,—elle a, bien entendu, sa valeur et sa place à elle, dans les cœurs de ceux qui ne peuvent monter à un point de vue philosophique—cependant, nous affirmons que la religion, comme telle, ne saurait jamais être absolue, ni virtuellement ni autrement, et qu'à mesure qu'elle devient philosophique, c'est-à-dire, qu'elle se rapproche de l'absolu, elle cesse d'être religion et devient philosophie. Aussi, sur ce point, nous sommes parfaitement d'accord avec Strauss, qui, selon nous, ne fait que combattre, dans l'intérêt de la philosophie, une religion devenue obstructive au progrès et, partant, plus qu'inutile. Cela ne veut pas dire que nous approuvions la philosophie par laquelle Strauss désire remplacer le christianisme; tant s'en faut. Enfin nous prendrons la liberté de rappeler à la mémoire de M. Véra une chose qu'il paraît avoir oubliée, savoir, qu'attaquer un ouvrage avec des armes tirées de l'arsénal d'un système que l'auteur de cet ouvrage ne reconnaît pas, n'est pas du tout dans l'esprit de la philosophie de hégélienne dont il se déclare le disciple dévoué.

St. Louis, le 10 Avril, 1874. THOMAS DAVIDSON.

Is Inorganic Matter Dynamical?

Mr. Editor:

I read in your journal, and have read before, that both Kant and Hegel define inorganic nature as dynamical; it is simply mathematical. Dynamics appear in organic nature as well. Is not our idea of power from our own consciousness in organic nature? If not, that of horse power certainly is derived from organic matter.

In inorganic nature, form or structure (e.g. crystallization), composition (witness the law of definite proportions), motion, force in its development and in its distribution, harmony, and so forth, are all regulated mathematically. Organic nature breaks loose from these conditions and limits, and is emphatically teleological. Here form, composition, motion, and the outgoing of force, is according to the end in view. In both departments the properties of matter are the same. In each, these properties are made to work out all that can be educed from them under their respective limits. Take, for instance, the properties of elasticity and of muscular contractility. The former is cohesion with a to and fro movement among the cohering molecules according to mathematical law; the latter is cohesion with a to and fro movement of the cohering molecules according to volition. The highest attainment of the first is perhaps the production of musical sounds. The last stops not here; but while it loses nothing that it has attained in inorganic nature, strives through all inferior animated nature till it reaches its final goal in the human voice, viz. in the production of articulate language. Thus, with the greatest economy of means, the same apparatus that distributes the air to the blood to enable it to avail itself in the most perfect manner of its chemical properties, so modifies itself in this very act of distribution as to compel the mechanical properties of the same substance into subservience to the highest and latest function which mind performs in connection with matter.

* * * * * my question is this: is not the order of inorganic nature strictly a mathematical order, with the same life or spiritual activity underlying it as that in which we live and move and have our being?

Rockport, Mass., Dec. 4, 1873. BENJ. HASKELL.

Mr. Editor:

Can Matter Produce Mind?

Another absurdity wherein materialistic philosophers choose to involve themselves is this: they first sneer at the notion that thought could have produced any matter, no matter how fine, aye, though as fine as the finest gases or the thinnest ether; and the next moment we find them engaged in discovering some sublimated sort of matter, phosphorus if you please or anything else, the gases whereof finally culminate in thought. You cannot take hold of any Popular Science work now-a-days without meeting notices of attempts that have been made to get at this final link whereby matter is changed into mind, and other notices abusing all who dare to talk of mind's producing matter. As if either statement were not equally absurd and foolish! It is generally pretty laughable to watch a dog trying to catch his tail; but for men who acknowledge that they have passed beyond the gorilla stage of life, and that they have consequently lost their tails altogether, to attempt the same problem is a little more than ridiculous. No sensible mind lays claim to the power of producing matter, and hence no matter, whether fish-like or otherwise, should be so recklessly bold as to assert its power to produce mind. That it may produce idiocy is clearly illustrated every day, and will be disputed by no attentive reader of popular books on physical science.

Can Thought make Granite?—A remark very characteristic of the aver age Englishman's notion and comprehension of the nature and object of Speculative Philosophy was recently noticed in the Journal in an article by Dr. J. Hutchinson Stirling. A great English thinker put to Dr. Stirling, as a final extinguisher, this question: "Can thought make granite?"

With this simple question the materialistic Briton must have thought he had crushed the idealistic Professor beyond all chance of recovering; nor is it to be supposed that the supreme idiocy of asking such a question ever entered the interrogator's mind, since he doubtless belonged to the same school of English philosophers that daily propound to themselves seriously another question just as absurd, "How does beefsteak make thought?" and use their microscopes and other ingenious instruments in attempts to solve that question, to the infinite amusement of those who perceive the absurdity.

The materialistic Englishman—and for that matter we may add American of the same notable school—knock their idealistic opponent down by asking an absurd question; and then go and ask themselves another question, its exact counterpart in idiocy, and knock their own heads against it, as if it were not from its absurdity equally unsolvable.

Meanwhile the idealist is content to confess that thought cannot make granite; though he also would like to claim that neither beefsteak nor the accompanying onions can ever make thought.

St. Louis, March 25, 1874. A. E. KROEGER.

Πάντα ῥεῖ.

By Austin Bierbower.

Not all that is, is in full being now;
  Its other half has been, its future half will be;
All time is needed for a thing's full self,
  Which is not, but becomes, and passes by degree.

One point of time, no more than point of space,
  Holds all things in its compass, or holds one;
Things are extended both in date and place,
  And what is here is there, and what is now 's anon.

Nought is, nought was, and nought will ever be,—
  All time summed up alone must give the thing;
To have been, be, and be-about-to-be, 's
  Its way,—past, present, future, in its form of being.

What is is wanting where it joins the past,
  And needs a cause to make its being full;
'Tis wanting when it joins the future too,
  And straight demands th' effect to be full fact at all.

Things are not, but are changing, and the whole,
  (If whole there be where things are infinite,)
No more than single part can be at once,
  But all 's becoming, and is never self-complete.

They are not, but are passing; not to be 's
  Their nature, or remain in stable state, but going, unbecoming and becoming, passing hence
  And hither coming in perpetual flow.

Each point with all in some connection stands;
  Twofold it reaches into space and time,
And through the worlds and through eternity expands,
  Exists not in itself, but with the whole combined.

Attraction holds it to the sun and stars,
  Causality to other days and years,
(Whose force still in it makes it partly past,)
  And in its latent germs exists in future years.

One mighty whole through space and time dispersed,
  With everywheres its parts and nowheres all,
The universe in two dimensions spread,
  Attraction and causality uniting them a whole.

BOOK NOTICES.

Föreläsning om Nyttan och Befogenheten af Allmänna Föreläsningar, hållen i Warbergs Högtidssal den 7 April 1872; jemte Grundschemat till ett Philophiskt System i populär framställning af Emanuel Hvalgren. Köping: J. F. Säfberg, 1873.

The author of the above paper, Emanuel Hualgren of Warberg, Sweden, expects to publish a large work unfolding completely his "Theocosmic System," an outline of which is before us. Some idea of the system may be arrived at by studying the articulation of the categories in the following scheme:

A. The Idea-Spirit (Godhead) [Creator].
B. Spirit (the Universe) [or the Creation].
  I. Elementary Spirit (material life).
    a. Barotic Spirit (gravity).
    b. Photeric Spirit (light).
  II. Biological Spirit (spiritual life).
    a. Erotic Spirit (love).
    b. Eleutheric Spirit (freedom).

The antithesis of weight (centripetal force) and light (centrifugal force), or of contraction and expansion, reappears continually in Nature. Its analogue in the spiritual world is the antithesis of love and freedom. Love is centripetal and freedom centrifugal. The æsthetic and religious phases of Spirit are centripetal; the practical (i.e. legal and political) and theoretical phases of Spirit are centrifugal. Arranged in the order from highest to lowest, the phases of Spirit (mental and material) are as follows: (*a*) Logical (reason), (*b*) Noëmatological (wisdom), (*c*) Thelematological (will), (*d*) Themistiological (justice), (*e*) Pathiological (feeling), (*f*) Psychiological (powers of the soul), (*g*) Phantasiological (imagination), (*h*) Harmoniological (order), (*i*) Phenomenical (illuminating), (*j*) Chaotic (nonbeing), (*k*) Genetic (formation), (*l*) Chemical (becoming), (*m*) Crasiotic (heat), (*n*) Ontologic (being), (*o*) Chromatic (colors), (*p*) Stereotic (thing).

Die Neue Zeit. Freie Hefte für vereinte Höherbildung der Wissenschaft und des Lebens. Herausgegeben von Dr. Hermann Freiherrn von Leonhardi. Prague: F. Tempsky. Publisher.

We have received the first three numbers of the third volume of this most interesting publication, the general scope and tendency of which we have described in a previous number of the journal. We then promised at some future time to give our readers a sketch of the philosophical system of Professor Leonhardi, based upon that of Krause, but various reasons have compelled the postponement of such a work. It would require, indeed, not an essay, but a good sized book, to convey an idea of the various features of the Krause-philosophy in its constant intermingling with the affairs of human life. Though a part of it claims to be pure Science of Knowledge—a term, by the bye, which Krause has revived from Fichte's terminology—it almost everywhere overleaps the barriers of theoretical knowledge and enters those of practical life, in which it proposes to effect a thorough reformation. Hence all the agitations of our present social condition, from the woman movement down to the Kindergarten system,

are, in one way or another, considered in their general relation to the development of humanity by the philosophers of the Krause school, and treated in the *Neue Zeit* with constant reference to their latest phases.

The numbers before us open with a lengthy article by Dr. H. Ahrens, Professor in Leipzig, upon "The False Paths in the last German Intellectual Development and the Necessary Reforms in Our System of Education," an article as timely for the Germans, in their new and unsettled political and social condition, as it is instructive for foreigners. Then follows an article, by Professor Leonhardi himself, on the "Science of Rights and the Necessity of Establishing a System of International Law for all the Nations of the Earth." The Professor demonstrates pointedly how the Geneva Convention has shown the possibility of such an international judicial tribunal, and that there is really nothing impracticable in its execution.

Dr. Hohfeld of Dresden furnishes a contribution on the importance of Julius Froebel for the present age, while Dr. Roeder discusses the relation of Morality and Law, and Dr. Stamm writes on the relation between Labor and Capital. Two excellent articles are devoted to showing up the absurdity of the Darwinian theory; but probably the best essay in the volume, of a purely philosophical character, is the last one, on Space, by Dr. Leonhardi. There are, however, so many good things in this periodical that it is impossible to notice them all in a mere sketch. We can cordially recommend the *Neue Zeit* to all students of philosophy as well as to all those who desire to keep themselves posted on the advancement of social, political, religious and intellectual life in Germany. A. E. K.

Transactions of the Wisconsin Academy of Sciences, Arts, and Letters, 1870–72. Madison, Wis.: 1872.

The contents of this volume are, first, an able Report by the President, Dr. J. W. Hoyt, embracing a lucid statement of the basis on which the Academy is organized, its general plan, and a report of what has been accomplished. The system of classification adopted by the President in order to tabulate his results is a notably excellent one, and deserves the careful study of all who are attempting to organize an institution of the kind.

Under the department of Social and Political Sciences we observe an able paper on "The Relation of Labor and Capital," from the pen of Dr. Chapin of Beloit College. Under the department of the Natural Sciences are found ten able articles. The volume is a credit to the intelligence and scientific interest in Wisconsin.

The Principles of Science: A Treatise on Logic and Scientific Method. By W. Stanley Jevons, M.A., F.R.S., Fellow of University College, London; Professor of Logic and Political Economy in the Owens College, Manchester. In two volumes. London: MacMillan & Co. (38 Bleecker street, New York.) For sale by Gray, Baker & Co., St. Louis. Price $9.

This work discusses (1) Formal Logic, deductive and inductive; (2) Number, Variety, and Probability; (3) Methods of Measurement, including the law of error; (4) Inductive Investigation; (5) Generalization, Analogy, and Classification. It is a work of great labor, great erudition, and of a life of experience in the concrete fields of scientific research. It impresses us as a Titanic upheaval through the heterogeneous strata of for-

mal logic, mathematics, physics, sociology, and modern skeptical and evolutional theories toward the universal and necessary truth of an exhaustive theory. It deserves careful study at the hands of thinkers.

Transactions of the Albany Institute, vol. vii. Albany: J. Munsell, 1872.

This volume contains, besides other papers, a remarkable article on the "Theory and Calculus of Operations," by John Paterson. His attempt to reach a cosmical philosophy deserves to be sketched in full, and we hope at some future time to do it justice. His subtle calculations are based on the hypothesis of radiating molecular centres of force, whence arise static forces or solid matter from their mutual limitation. Each reaction leads to a higher, more complete and concrete synthesis. In his "*Digression First*" he polemicizes against the prevalent method of conducting experimental philosophy on statical principles alone. "Under this method," he says, "everything, every phenomenon is weighed, measured, and classified; the dead results being strung on a thread of antecedents and consequents, like night invariably followed by day, with *habit* for interpreter of the connection. A true method of theorizing has scarcely dawned upon us. Anything like an anvailable notion of Cause is positively repudiated. The shrine of the Protean god FORCE attracts devotees few and far between, and is glanced at askance by those who profess to be wise in their day. The fundamental conceptions of space and time are stifled in darkness that cannot be felt; are, in fact, believed to be created by each customer at his own convenience, for his own use, and to perish as soon as attention to their content ceases. * * * *

"It would appear that the notion of matter, unless transformed into that of force, is a stale, flat, and unprofitable conception, ending in non-entity. Abstract from matter its qualities, and nothing is left but the conception of an inconceivable subject of inhesion * * * . Matter or substance is a perpetual or ceaseless ENERGY, in the original Aristotelic signification of the word, constantly acting and reacting throughout the domains of the physical world * * * * . It may be said that the amount of force in the universe is constant. Equilibrated forces are constantly destroyed and constantly replaced in maintaining and restoring equilibrium when interrupted. Substances of different density, that is, forces of different intensity, come to interference and force is liberated. The liberated forces circulate through trajectories peculiar each to its genus and the specifying conditions it encounters, and finally all return to their source and keep the cosmical measure full. Everything resolves into force and force re-dissolves, but dies at last."

The Philosophy of History in France and Germany. By Robert Flint (University of St. Andrews). Edinburgh: Wm. Blackwood & Sons, 1874.

Our author treats the philosophic histories of France in fourteen chapters. I. Bodin and Cartesianism; II. Bishop Bossuet; III. Montesquieu; IV. Turgot; V. Voltaire; VI. Condorcet; VII. The Theocratic School; VIII. Saint-Simon and Fourier; IX. Cousin and Jouffroy; X. Guizot; XI. The Socialistic School—Buchez and Leroux; XII. Auguste Comte; XIII. The Democratic School—Michelet and Quinet; XIV. The Democratic School—De Tocqueville, Odysse-Barot, De Ferron, and Laurent.

The German contribution to the Philosophy of History is treated under the following heads: I. The Progress of Historiography in Germany; II. Rise of Historical Philosophy in Germany—Leibnitz, Iselin, Wegelin, Schlözer, Von Müller; III. Lessing; IV. Herder; V. Kant and Schiller; VI. Fichte; VII. Schelling; VIII. Schelling's School—Stutzmann, Steffens, and Görres; IX. Frederick Schlegel; X. Krause; XI. Hegel; XII. Schelling, Bunsen, and Lasaulx; XIII. Lazarus, Lotze, and Hermann.

Such a table of contents could not but introduce a work of the intensest interest. Even a bungler would bring together from such sources scraps of the greatest value. But the author is no bungler, even if we deny to him an altogether adequate critical acumen or ability to dissolve the several stand-points into one central one.

He uses the following language regarding Hegel: "It is very possible, after honest study of Hegel, to doubt altogether the legitimacy of his method, to disapprove of many of his conclusions, to be conscious of great defects, to be often unable to make out what he means; but quite impossible to deny him an extraordinary wealth of thoughts which can be understood, and which are of the most profound and precious kind. It is a simple matter of duty to recommend students of philosophy to make themselves acquainted with Hegel; for, however anti-Hegelian they may find reason to become, he, if they would ever form for themselves a philosophy worthy of the name, is the thinker of the century from whom they will require to borrow most; and in philosopny no less than in the special sciences much borrowing is indispensable even to the most original—a truth which Hegel well knew, and fully acted on, borrowing the thoughts of every man whom he believed to have had much thought in him, and by re-thinking making them always his own, and often truer and completer than they were before."

The author promises a continuation of the work treating the philosophies of history that have appeared in Italy and England.

Final Cause as Principle of Cognition and Principle in Nature. By Professor G. S. Morris, M.A., Michigan University.

This paper is a contribution read before the Victoria Institute, or Philosophical Society of Great Britain, May 18th, 1874. Professor Morris, translator of Ueberweg's History of Philosophy, is well known as an able defender of the views of Trendelenburg. When a philosopher reads the words "Final Cause," he thinks of Aristotle and "his philosophic family," prominent in which sits Trendelenburg. As the doctrines of Fatalism and Free-will are founded respectively on the idea of efficient cause and that of final cause, there is no investigation in pure thought of more importance, morally, socially, or politically, than this of the nature and grasp of FINAL CAUSE.

The Anæsthetic Revelation and the Gist of Philosophy. By Benj. Paul Blood. of Amsterdam, N. Y.

Any one desiring to read this remarkable essay, which professes to unfold the theory of the true method of insight, can obtain a copy by writing to the above address. In our "Notes and Discussions" we propose to allude to the ideas of Mr. Blood at some future time.